AIR CONDITIONING & REFRIGERATION NEWS

The Newspaper of the Industry

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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Verse of the Week
Gags of the Week
We Aren't So Original Any More
You Never Know
So You Think You Have Troubles Dept.
So True!
Why Mothers Grow Old
Cocktail Party Conversation
Simple Prose the Best

Stories of the Week

Irisher and Scot attended a basketball game together. The Mick kept swigging from a flask, but never offered to share it with the Scotchman.

"Old as I am," boasted the lit-up Irishman, "I could play basketball better than any of thim down there."

"Aye," soured McTavish. "Ye are a good dribbler. But ye dinna know how to pass."

Earl Wilson has collected cute barbs by theater critics, among the best of which were:

"Guido Nadzo was Nadzo Guido."—Brooks Atkinson.

"The Murtah Sisters murtahed several songs."—Willila Waldorf.

"He exudes a certain boyish charm which I find absolutely resistible."—Unnamed reviewer.

And then there's our favorite, committed by Charles Gentry of the *Detroit Times:*

"The Haydn Quintet Played Brahms last night. Brahms lost."

Verse of the Week

All your strength is in your union.
All your danger is in discord;
Therefore be at peace henceforward,
And as brothers live together.

Gags of the Week

If men took any real interest in what other men wear, I bet there would be as many men in church as there are women.—*Farm Journal.*

Man now can travel faster than sound—a fact which does not please gabby women.

We Aren't So Original Any More

Sociologists deplore the conformity and *sameness* of American civilization nowadays. It seems we dress alike, talk alike, behave alike, do the same things, etc. All this conformity to a

(Concluded on Page 16, Col. 1)

A Plan for Levelling Out Sales In The Air Conditioning Industry

(Guest Editorial By Harry Alter)

Editor's Note: Harry Alter has been (1) a successful refrigeration parts and supplies jobber; (2) an independent component manufacturer; (3) president of an appliance manufacturing concern; (4) distributor of a full line of major appliances in a metropolitan area; (5) distributor and contractor for all types of air conditioning installations; (6) articulate occasional contributor to the News.

In this air conditioning industry all of us beat our brains out trying to get pre-season installations. But the buying public just won't accept an installation during the winter months, or even in the early spring. The reason for this, in my opinion, is that as an industry *we don't have any appreciable money saving incentive to jolt them into buying out of season.*

Contractor-dealers occasionally offer a little better price, 2% or 3% discount, but certainly there is no dynamite in their proposals to stimulate pre-season buying. Then along

(Continued on Page 24)

Memphis Home Unit Sales Held In Cool Summer

By C. Dale Mericle

MEMPHIS—There were 1,240 residential air conditioning systems installed in Memphis homes during 1956.

This figure was determined by AIR CONDITIONING & REFRIGERATION NEWS in interviews with contractors and distributors serving the Memphis area.

The 1956 installations were achieved despite a disappointingly cool summer, the third such summer in a row, some contractors lament.

The 1,240 figure for 1956 is down slightly from the 1,251 reported for 1955 in the March 12, 1956 issue of AIR CONDITIONING & REFRIGERATION NEWS. Although several contractors stated definitely that their sales for 1956 were off from the preceding year, it is altogether possible that the 1,251 total given for 1955 was too high.

A sharp discrepancy in the 1955 figures is noted in at least two instances. In making these annual surveys, the NEWS asks

(Continued on Page 42)

House Units Row Over Housing Bill; It May Be Killed

WASHINGTON, D. C.—After the House Banking committee overwhelmingly approved a stepped-up Federal housing program to assist the home-building industry and make mortgages available on easier terms, the House Veterans Affairs committee voted to fight key provisions of the "omnibus" bill.

Generally, the bill goes far beyond Administration recommendations for Government housing programs and contains several provisions vigorously opposed by Federal housing officials.

(Concluded on Page 9, Col. 3)

Romney, Wolfson 'In Agreement on Expansion Plans'

DETROIT, April 11—Following a day-long conference today with principal stockholder Louis Wolfson at the corporation's headquarters here, George Romney, president of American Motors, stated that the company would press forward with a three-point program, point 1 of which is "making Kelvinator the nucleus of a broader and bigger appliance program."

Wolfson appeared briefly with Romney at a press conference following their meeting, making a short statement which said in effect:

"George Romney is running this company. I am going along with his program, and I was very much impressed with the prototypes of 1958 models of appliances and automobiles

(Concluded on Page 4, Col. 3)

Closer Cooperation To Aid Air Conditioning In Govt. Seen as Symposium Result

Future Meetings of Industry, Federal Officials Likely

By C. Dale Mericle

WASHINGTON, D. C.—Closer cooperation between government and industry in promoting and justifying air conditioning for government buildings seems probable following the jointly sponsored symposium held at the U. S. Department of Commerce auditorium here April 3 and 4.

Nearly 400 industry executives and high level government officials—evenly divided—registered for the two-day meeting, which was arranged by the Business and Defense Services of the Commerce department and industry groups.

Major problem confronting government officials, it was pointed out by various speakers, is to justify the cost of installing and operating air condition-

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Detailed accounts of several talks presented at the government-industry symposium will appear in future issues of AIR CONDITIONING & REFRIGERATION NEWS.

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ing in other than obviously necessary applications despite the fact that a government office, unlike say a restaurant, doesn't need more customers and can't "write off" the cost because it pays no taxes.

Industry representatives on the program, attempting to supply this desired ammunition, touched upon research already under way which should supply the necessary scientific proof of increased worker efficiency resulting from air conditioning and stressed the belief that

(Concluded on Page 47, Col. 1)

115 To Exhibit At West Coast Cooling Show

LOS ANGELES — To date, some 115 exhibitors have signed up for space in the Western Air Conditioning, Heating, Ventilating, and Refrigeration Exhibit, according to a list released by Fred J. Tabery, exhibit manager.

The exhibit and conference, first of its kind to be staged on the West Coast, will be held in the Shrine Exposition Hall here from May 4 through May 8. It is sponsored by the Western Air Conditioning Industries Association headed by Arthur J. Hess.

Expected to draw attendance from all areas west of the Mississippi, the affair coincides with a meeting of Region 4 of the

(Concluded on Back Page, Col. 1)

Food Retailers Plan Many New Stores, Remodeling

CHICAGO—Here's a straw in the wind indicating that business should be good this year for commercial refrigeration firms.

Out of 57 food store representatives attending a management short course here who reported their building plans for 1957, 27 will build new stores and 33 will modernize and expand. Some of the retailers, who operate from one to four stores each, obviously plan to do both.

Altogether, there were 85 enrollees in the seminar.

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Carrier Details Elliott Merger

SYRACUSE, N. Y. — Agreement on a plan to merge the Elliott Co. of Jeannette, Pa. into the Carrier Corp. was announced recently by both firms.

Elliott is a supplier of Carrier Corp. It makes steam turbines, heat transfer apparatus, and other types of industrial equipment. It is developing a line of small motors, a new gas turbine, and other powerhouse equipment.

Under the merger agreement, Elliott stock would be exchanged for Carrier stock. Elliott would continue under present management as a division of Carrier.

The merger agreement will be submitted to stockholders of

(Concluded on Back Page, Col. 4)

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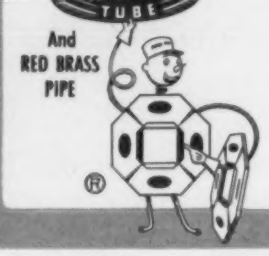
COPPER TUBING

Made by
Copper Tube SPECIALISTS



And
RED BRASS
PIPE

SECOND to NONE
for Refrigeration &
Air Conditioning Equipment

READING TUBE CORPORATION
EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA.

New York RACCA Stalemated In Metal Trades Cooling Contract Negotiations

NEW YORK CITY—Leonard Morris, president of the New York group of the Refrigeration & Air Conditioning Contractors Association (RACCA) said in an interview here last week, that the RACCA attempt to negotiate a contract with Local 638-B of the Metal Trades Branch of the United Association is at a stalemate stage.

RACCA members have been operating without a contract since July, 1956. The union local wishes to effect a contract with RACCA similar to the one they have with the Mechanical Contractors (formerly Heating, Piping & Air Conditioning) Association. Mechanical Contractor members are installers of large air conditioning systems, mostly on new commercial and industrial construction. It is the contention of RACCA that their members have different labor problems, since they work on smaller installations, and do a great deal of service work.

Morris stated that the members of RACCA have been trying to negotiate on an air conditioning level, apart from piping, heating, and steam fitting operations. According to Morris, who is president of Five Towns Refrigeration Co., East Rockaway, L. I., the RACCA is a qualified bargaining agent for management.

The RACCA members have asked that their employes be identified as a separate craft, since their men work exclusively on air conditioning jobs. Morris further stated that the members of the union local who work for them have no real voice in deciding about their contracts or contractual obligations.

To assist RACCA and their employes to break the stalemate under which they have been operating for the last nine months, representatives of the national headquarters of the UA and of RACCA have been called upon to assist in the contract negotiations. According to members of the RACCA Labor Committee, Ray Bennis, chairman, of Contractor's Air Conditioning Co.; Walter Hoerning, Hoerning Engineering Co.; Myron Steffens, AAA Refrigeration Co.; and H. J. Eichhorn, Five Towns Refrigeration Co., all of Greater New York, the next contract meeting with the UA local is not even scheduled.

Morris said that the local RACCA group only wish to have a contract similar to the one accomplished between the New Jersey RACCA and the UA locals in that state, which was completed recently.

Kelvinator Resumes Appliance Production, Adds 2 Refrigerators

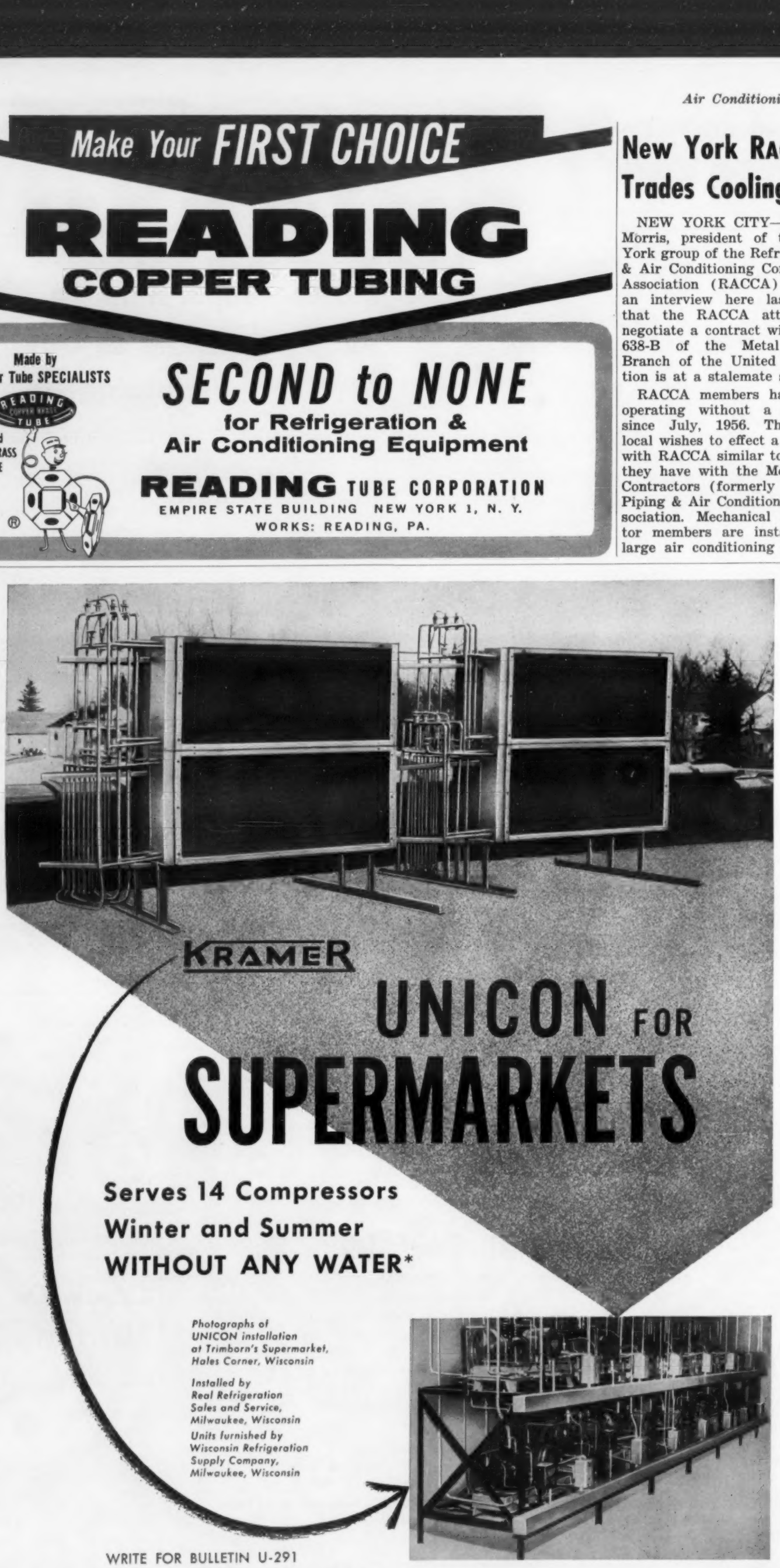
DETROIT — Production has resumed at Kelvinator's Detroit and Grand Rapids, Mich. appliance plants, with two new refrigerator models added to the company's lines.

H. L. Travis, vice president in charge of sales, said the new refrigerators are competitively priced special models in the eight and 11-cu. ft. size categories.

Model K20G-8, an 8-cu. ft. model, has a suggested cash delivered price of $179.95, and the new 11-cu. ft. model K42G-11, a suggested price of $199.95.

"The new models lend timely step-up selling punch to Kelvinator's Spring Trade Winds promotional campaign, which will be announced to consumers April 24," Travis said. "The price appeal in the new refrigerator models gives Kelvinator dealers increased traffic-building leverage and the kind of creative selling opportunity that is the prime objective of a sound promotional campaign."

The two Kelvinator plants were closed last week.



KRAMER

UNICON FOR
SUPERMARKETS

Serves 14 Compressors
Winter and Summer
WITHOUT ANY WATER*

Photographs of UNICON installation at Trimborn's Supermarket, Hales Corner, Wisconsin

Installed by Real Refrigeration Sales and Service, Milwaukee, Wisconsin

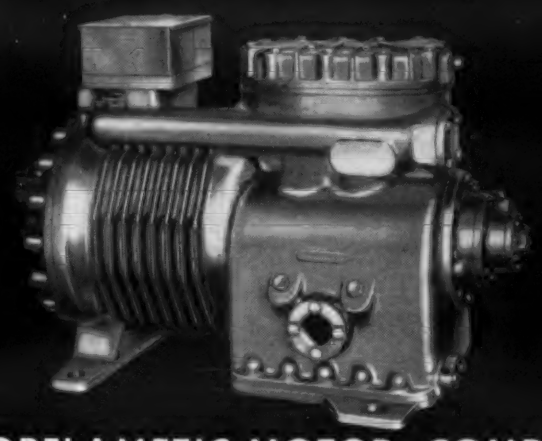
Units furnished by Wisconsin Refrigeration Supply Company, Milwaukee, Wisconsin

WRITE FOR BULLETIN U-291

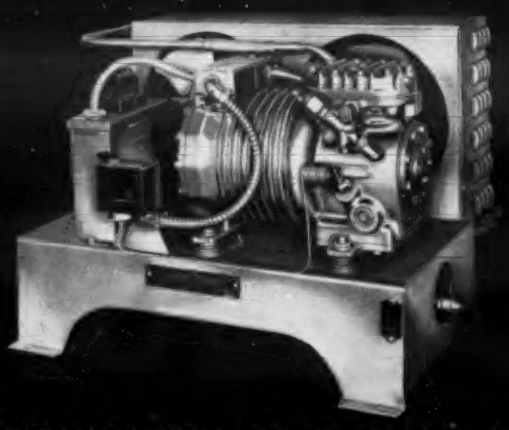
**UNICON is a Remote-Type Air-Cooled Condenser*

KRAMER TRENTON CO. • Trenton 5, N.J.

For more information about products advertised on this page use Information Center, page 38.

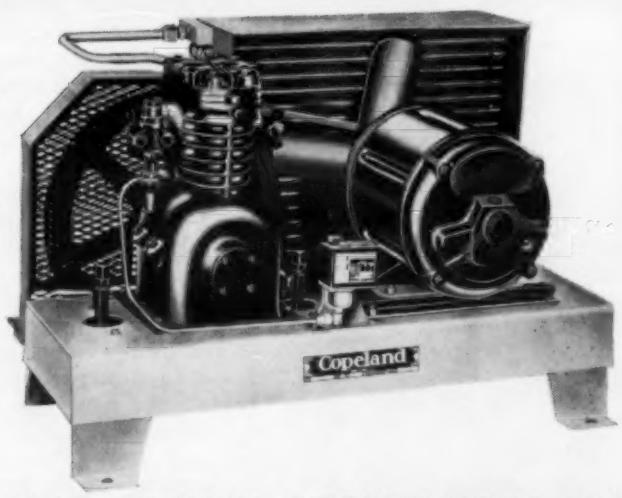


COPELAMETIC MOTOR-COMPRESSORS



COPELAMETIC CONDENSING UNITS

COPELAWELD MOTOR-COMPRESSORS



BELT-DRIVEN CONDENSING UNITS

SINCE 1918 **Copeland** REFRIGERATION CORPORATION

Sidney, Ohio

LIVE BETTER ELECTRICALLY

THE RIGHT PROFIT COMBINATION for wholesalers, dealers, manufacturers

Copeland's distribution policy — backed by products of exceptional quality and 100% dependable service — is a sure-fire click. It opens the door to added volume, earnings and all-around satisfaction. Consider these facts:

— — field sales stocks of motor-compressors and condensing units valued at close to $4,000,000.

— — more than 25,000 sales-conscious dealers from coast to coast, working closely with our nearly 150 wholesalers.

— — in-or-out-of-warranty service protection which builds sales for wholesalers of new parts and replacement equipment.

— — a potent sales help for manufacturers hot after their share of the booming refrigeration and air conditioning market.

— — speeded-up service and unexcelled quality, thanks to Copeland's spanking-new factory.

Depend on Copeland . . . always a safe bet to deliver.

For more information about products advertised on this page use Information Center, page 38.

Airtemp 'Consumerizes' Advertising In Expanded, Concentrated Campaign

DAYTON — Airtemp Div., Chrysler Corp., has launched "the most concentrated and sizable consumer advertising campaign ever sponsored by the company."

During April, May, and June, Airtemp full-page ads will appear in *Life, Reader's Digest,* and *Newsweek. Life* has been booked for a series of seven colorful ads over the three-month period.

In expanding its consumer ad program, the company has also "consumerized" its advertising copy approach. Featuring Airtemp's new "Dial Springtime Anytime" merchandising theme, the ads "treat air conditioning as a full-fledged member of today's appliance family," it was pointed out.

"Ads of earlier years were of an educational nature—fashioned to acquaint the public with the benefits of air conditioning. But with millions of conditioners sold and in use, the educational era has passed.

"Airtemp, therefore, has 'consumerized' its advertising to emphasize that the air conditioner comfort-dial, television, radio, automatic washer, telephone, and other easy-to-operate dials are all now fellow finger-tip servants in the modern American home."

Supporting the intensified consumer program, full-page ads will also appear in 23 other national builder, architectural, engineering, and vocational magazines during the April-June period.

Romney, Wolfson 'In Agreement on Plans'--

(Concluded from Page 1, Col. 3)

which I saw, and also with the program outlined to me. My only interest is in seeing that the company will be in the black by 1958." Wolfson did not remain to participate in the questioning period at the press conference.

In answer to questions from the press, Romney said that none of the discussions with Wolfson involved the "sale or getting rid of" either the automotive or appliance divisions of the company. However, they do involve the possibility of the acquisition of or a merger with other corporations, he declared.

The three-point program with which Wolfson is in agreement, Romney said, is:

1. Making Kelvinator the nucleus of a broader and bigger appliance program.

2. Expanding the company's percentage of the future car market, with small, compact and larger cars.

3. Greater diversification.

Asked what would happen if American Motors were not "in the black" in 1958, Romney said that if the company "isn't in the black by the end of the calendar year 1958, I will be leading the corporation into some very drastic changes."

Queried as to the nature of the "broader and bigger appliance program," the AMC president said that there were a number of products which Kelvinator might add, but that he couldn't be specific at this time. However, he indicated that no consideration was being given to traffic appliances, and he said the question of whether diversification would involve home furnishings items other than appliances was a very "iffy questions."

Questioned as to why Wolfson didn't stick around for questioning, Romney said "Why should he—I have to speak for the corporation. He's only a stockholder." In introducing Wolfson, Romney expressed his personal high regard for the young financial wizard.

Do the proposals under consideration on the acquisition or merger of other companies involve some of those in which Wolfson has an interest? Some of them, Romney said, but he declared that "Wolfson is not pressing for the merger or acquisition of other properties."

American Motor's automotive division has been off to a better start this year than last, the corporation executive said, and its dealers are making more money.

KELVINATOR'S ROLE

However, while refrigerator sales started off well this year, the recent industry price reductions at the factory level have been a very disturbing factor, and forced a shutdown of Kelvinator production facilities to change its model lineup, Romney said. He termed present pricing policies on appliances an "unhealthy situation."

A principal factor in American Motors progress towards profitable operation must be in keeping the Kelvinator division profitable, he declared.

Financial and business writers have been speculating on several possible courses for the corporation ever since Wolfson first got into the picture. These speculations center mainly on some sort of a merger with or purchase of other companies with the primary aim of using the $38 million tax credit (tax loss carry forward) which American Motor Corp. has accumulated.

These stories have also had AMC selling off either its automotive or appliance division, and concentrating on one or the other fields, but Romney in particular has voiced denials that any such moves are contemplated.

At the press conference Romney read the following formal statement (in addition to the points covered above):

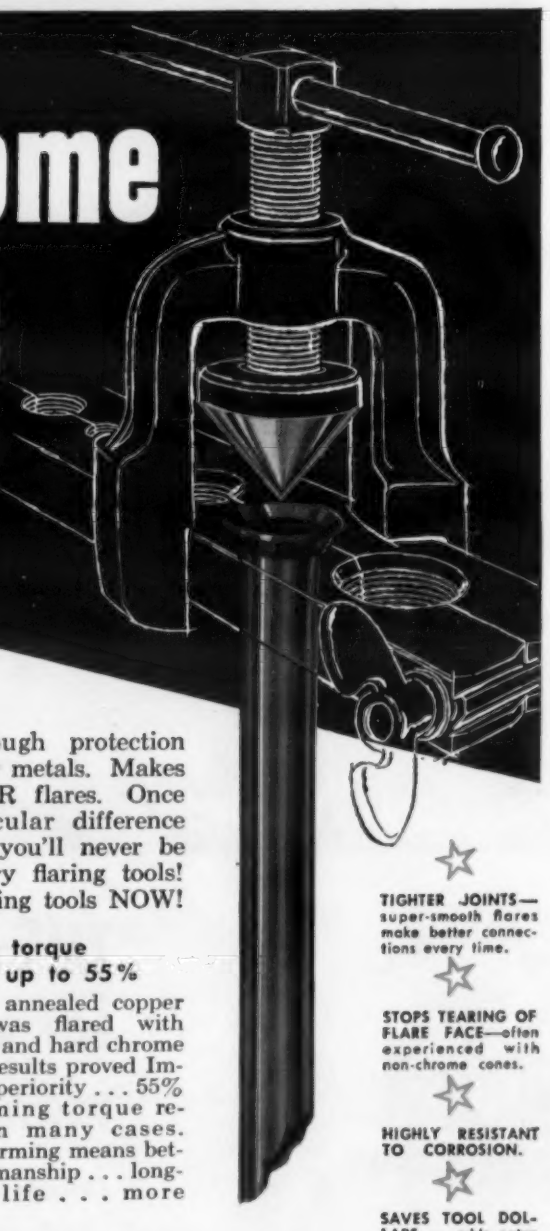
"I am further heartened by today's conferences. We have explored more thoroughly the steps necessary to put the operations of American Motors on a profitable basis by the early part of 1958. We continue to find ourselves in basic agreement. Our plans are all based on the continuation of our automotive and appliance activities. The strength of these programs, as well as our tax credit position, provides the company with the opportunity to explore a number of alternative proposals.

"These proposals include suggestions made by Mr. Wolfson as well as proposals made by others. We are in agreement that management should thoroughly and objectively consider various proposals that will contribute towards the strengening of the company and its early return to profitable operations.

Another Imperial first!

New hard chrome finished cones

now standard on all Imperial flaring tools!



NOW

make SMOOTHER flares up to 55% easier

More evidence of Imperial tubing tool design leadership! At no increase in price — Imperial gives you all the dollar-saving, time-saving, tool-saving advantages of industrial hard chrome on all flaring cones in the complete line of Imperial flaring tools. Here's time-defying, diamond-tough protection that outlasts all other metals. Makes SMOOTHER, FINER flares. Once you see the spectacular difference hard chrome makes you'll never be satisfied with ordinary flaring tools! Replace your old flaring tools NOW!

Forming torque reduced up to 55%

In tests, annealed copper tubing was flared with standard and hard chrome cones. Results proved Imperial superiority . . . 55% less forming torque required in many cases. Easier forming means better workmanship . . . longer tool life . . . more profits.

Add this new tool efficiency to your shop. Order Imperial flaring tools from your wholesaler or write for Bulletin No. 3011.

TIGHTER JOINTS—super-smooth flares make better connections every time.

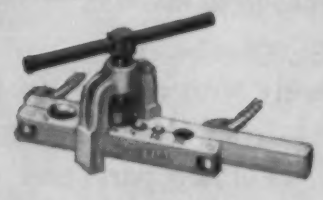
STOPS TEARING OF FLARE FACE—often experienced with non-chrome cones.

HIGHLY RESISTANT TO CORROSION.

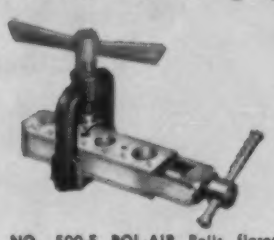
SAVES TOOL DOLLARS — adds extra service life to cone.

Only Imperial offers you hard chrome cones on all popular flaring tools!

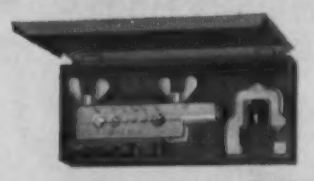
NO. 300-F HI-DUTY... single-lever clamping. Flares 3/16, ¼, 5/16, ⅜, ½ and ⅝" O.D. tubing. Each .....$6.25.



NO. 195-F FLARING TOOL has quick, slip-on forged steel yoke. Exceptionally easy to use. Flares ¼, 5/16, ⅜, ½ and ⅝" O.D. tubing. Each .....$5.75.



NO. 500-F ROL-AIR Rolls flares in the air and automatically burnishes 3/16, ¼, 5/16, ⅜, ½ and ⅝" O.D. tubing. Each..$9.95.



NO. 195-FB DOUBLE FLARING TOOL For automotive air conditioning. Double flares assure tighter joints and greater vibration resistance. Flares ⅛, 5/16, ⅜, ½, ⅝ and ¾" O.D. tubing. Each $26.25

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THE IMPERIAL BRASS MFG. CO.
566 South Racine Ave., Chicago 7, Ill.
In Canada: 334 Lauder Ave., Toronto, Ontario

Emblem of Quality

FITTINGS • VALVES • DRIERS • FILTERS • CHARGING LINES • TOOLS for Cutting, Flaring, Bending, Pinch-off, Swaging

For more information about products advertised on this page use Information Center, page 38.

Group Disagrees on What Is 'Good' Frozen Food Profit, Sees at Least 20% Mark-Up Necessary To Break Even

CHICAGO—A "vast discrepancy" exists in what is considered a good profit from a store's frozen food department.

This conclusion was reached by the Central States Frozen Food Association after hearing at its monthly meeting a panel discussion and members on the floor speaking on the subject.

Theodore C. Weigly, owner of Model Food Centers in Hammond and East Chicago, Ind., stated frozen food profits in his Hammond store were running $50 per lineal ft. each week and accounting for 6% of total volume.

When several members expressed surprise at "so high a lineal figure," Hugh Daum, president of Hugh W. Daum Co., brokerage firm, said he had come across figures up to "$108 per lineal ft." Others said they thought typical figures in the Chicago market were $18, $30, and $40.

Even though it disagreed on frozen food profits, the group generally did agree that a typical frozen food department cost 3-3½% more to operate than a grocery department.

Several members indicated "the retailer must have a mark-up of 20% before he breaks even in frozen foods." One said 25% was "more like it" in the Chicago market, while another reminded the group that A&P's frozen food markup was "only about 17½%."

Returning to sales per lineal ft., Daum stated much is said about lack of frozen case space. "But it is not rather a lack of management of frozen cases that is the real problem?" he asked. "I have seen cases stocked with seasonal items that ought to be removed or loaded with slow movers that will return little profit."

AEC To Consider Radioisotopes as Food Preservation Radiation Source

WASHINGTON, D. C.—Radioisotopes are being considered as radiation sources for preservation of food, the Atomic Energy Commission advised Congress.

AEC informed the Joint Atomic Energy Committee of negotiations with Kaiser Engineers, division of Henry J. Kaiser Co., Oakland, Calif., on a contract for food irradiation research. The seek to determine feasibility of a food irradiation reactor preliminary design by Internuclear Co., and to improve existing designs.

However, if enough cobalt 60 is found to be available at a suitable cost, the agency plans to abandon the present food irradiation reactor plans in favor of a cobalt facility, it said.

Cool Shopping Center

MONTGOMERY, Ala.—The Eastbrook Shopping Center here is fully air conditioned.

Self-Service Frozen Food Cases Lift Store's Sales In Converted Center Area

LINCOLN, Neb.—Sales per square foot were running at the rate of about $3 more annually in the converted space in the center of the Cornhusker Market here where modern self-service Tyler frozen food vending cases were installed early in 1956 to replace a 35-ft. gondola, it was reported by Anthony Messineo, co-owner.

Messineo said that consumer demand for frozen foods had climbed at his supermarket to the point where the refrigerated vending fixtures then in use were inadequate. Because frozen food lines have a rapid turnover and good profit margin, he and his partner, Michael Messineo, decided to locate frozen foods right in the middle of the store.

The 35 lineal ft. of Tyler cases represent 70 ft. of self service since the cases can be shopped with equal ease from either side. The vending fixture extends from near the service meat department at the rear of the floor to near the checkout counters at the front.

Self-service reach-in cases for dairy products, eggs and self-service meats are maintained in the old location adjoining the service meat department.

The gondola replaced by the frozen food cases was used mainly for coffee and similar narrow-margin items. These are now displayed on extensions of the wall shelving and by greater utilization of space on top of remaining gondolas, it was explained.

Messineo also noted that the modern cases, finished in pastel green, have attracted more frozen food and ice cream business than the cases they replaced. Another 25 ft. of Tyler self-packaged cases was planned.

Open Refrigeration Firm

GREENVILLE, S. C.—Greenville Meat Processing Co., Inc., capitalized at $10,000, has been granted a state charter to engage in meat processing and refrigeration; to sell refrigerator equipment. J. A. Cash is president.

BRUNNER
SINCE 1906
OVER 200 AUTHORIZED SUPPLY HEADQUARTERS . . . from coast to coast, for nearby supply of Brunner-Metic and Open Type Units and parts...fast, easy WARRANTY SERVICE
BRUNNER-METIC semi-hermetic Condensing Units from ¼ H.P. through 3 H.P.
BRUNNER CONDENSING UNITS . . . engineered to the right size for every Refrigeration and Air Conditioning job
Brunner's complete line makes it easy for you to supply condensing units that exactly match the capacity requirements for any refrigeration or air conditioning job . . . big or small!
With a horsepower range from ¼ H.P. through 100 H.P., the Brunner line offers you unlimited opportunities for more sales in 1957.
Want all the facts? See your Brunner representative, or write for catalogs and engineering data.
BRUNNER MANUFACTURING COMPANY, UTICA, NEW YORK
THE BRUNNER COMPANY, GAINESVILLE, GA.
In Canada: Brunner Corp. (Canada) Ltd., Toronto, Ontario
BRUNNER OPEN-TYPE Condensing Units from ¼ H.P. through 100 H.P.
BRUNNERIZE FOR DEPENDABLE REFRIGERATION AND AIR CONDITIONING

Increased Output Results from Clean Air at Comfortable Temperature All Year In Factory, ASHAE Meeting Hears

CHICAGO — The benefits gained by providing healthy environment for workers were forcibly brought out in a symposium on industrial ventilation and air polution, held as part of the recent convention of the American Society of Heating & Air-Conditioning Engineers.

The speakers were R. J. Marschall, manager of engineering, Abbott Laboratories; K. E. Robinson, ventilation engineer for General Motors Corp.; J. M. Kane, manager, dust control products, American Air Filter Co., Inc.; B. R. Small, staff engineer, mechanical engineering department, Aluminum Co. of America; and W. C. L. Hemeon, director of Hemeon Associates in Pittsburgh. Moderator was C. H. Pesterfield, newly-elected treasurer of ASHAE.

The speakers asserted that production can be increased by providing the worker with clean air at a comfortable temperature all year around. Extreme heat, dust, and other unnatural conditions are known to cause fatigue, Marschall brought out in his remarks, but no actual figures are available as to how much improvement a better environment can make.

URGES ENVIRONMENTAL RELATIONSHIP STUDY

Studies should be made in the relationship of environment to efficiency and productivity, Marschall asserted. In one instance he cited, absenteeism in hot weather fell off from 35% to none after air conditioning was installed. The men were more comfortable in the plant than they would have been at home, he said.

In this instance, the cost of air conditioning was found to be less than the average annual wage increase of the employes, about $16 per year, per employe.

Marschall stated that, in instances where building cooling is not feasible because of an impossible heat load, it has been very effective to provide spot cooling, with air outlets located within a few feet of the worker and, in many cases, adjustable to his preference.

Control of fumes is another important problem in providing healthy environment for the worker. "We need to know more about the toxic effects of fumes on workers over long periods of time as well as their effects on children and the aged, as regards exhausting of these fumes into the atmosphere," he said.

Marschall also pointed out the need for research to determine the merits of "tolerable" air conditions, as compared to "comfortable," relative to efficiency, health, and other factors.

W. C. L. Hemeon outlined his findings on the behavior of dust particles as part of his research in air polution control.

'DUST PARTICLE SIZE LESS IMPORTANT'

Hemeon has proved that the size of dust particles is of less consequence than the velocity necessary to keep them suspended in gas while being carrier to disposal point.

K. E. Robinson stated in his paper that survival of industry depends on contaminant control. He broguht out that industry, although it has long been aware of the importance of controlling contaminants exhausted into the atmosphere is still making large installations without any thought to pollution control.

He urged the society to either get in or get out of the ventilation field. Robinson charged that no proven formulas for basic data on handling large quantities of air have been developed nor is there any accurate data on how to size equipment for air handling on the industrial level.

B. R. Small voiced his opinion that proper ventilation is often overlooked in favor of air conditioning, but, he said, comfort ventilation is rapidly coming to the fore.

On the subject of summer ventilation, he stated that forced air supply in summer is the answer to many problems in new designs. Forced air, he said, is a poor substitute for mechanical cooling but an absolute necessity to produce efficiency.

Small presented slides illustrating several types of spot cooling installations where work area temperatures were normally well above the comfort level.

DEFINES PURPOSE OF DUST COLLECTORS

Kane defined the purpose of dust collectors:

1. Prevent public nuisance or health hazard.
2. Prevent fire or explosion hazard.
3. Prevent re-entry of contaminants into work area.
4. Permit recirculation of cleaned air to occupied space.
5. Salvage of useable material.

Kane pointed out a little-known fact that relatively little re-entry of contaminants is encountered even when supply air intake is located near an exhaust stack. He, too, asserted that air conditioning of industrial space is going to increase by leaps and bounds in the next few years.

If we can recirculate more air, he stated, we can materially cut down on capital expenditure for heating equipment and its operation.

The important factors in reclaiming and recirculating air were outlined; namely; toxicity, particle size, concentration of particles. If these conditions are within specified limits air can be economically cleaned and reused with complete safety.

It was stated from the floor that industrial hygenists are reluctant to return air that was contaminated even by limestone.

In reply to this, Kane explained that from samples of bleed air, taken from sources of contamination, it has been determined that after bleeding off 10% to 15% of the air the rest could be returned and re-used safely.

He also mentioned that success had been achieved in downgrading air from clean areas, such as an office, to contaminated areas.

In answer to another question from the floor, Kane stated that an exhaust stack should be 15 ft. above an adjacent building and that a discharge velocity of 3,000 f.p.m. at the discharge point was desirable for better diversion.

A
Curtis
FRANCHISE
MAY BE THE ANSWER!
Curtis has been in business for 103 years and through experience has learned how to maintain a mutually profitable relationship with our franchise holders. Curtis equipment is competitively priced, quality built, and nationally advertised.
Write for details
PACKAGED UNITS 3 THRU 20 TONS
LOOK AT THE CURTIS LINE
PACKAGED AIR COOLED UNITS UP TO 7½ TONS
PACKAGED LIQUID CHILLERS UP TO 100 TONS
PACKAGED UNITS 25 THRU 50 TONS INTEGRAL EVAPORATIVE CONDENSER OPTIONAL
CONDENSING UNITS UP TO 100 TONS
YOU CAN COUNT ON
REMEMBER...
Curtis
OUR 103rd YEAR
MANUFACTURING COMPANY
REFRIGERATION DIVISION
1912 Kienlen Ave. St. Louis 20, Mo.
CM-18
INDUSTRIAL AIR COMPRESSOR
AIR HOISTS AIR CYLINDERS
AUTO LIFTS

For more information about products advertised on this page use Information Center, page 38.

THE ONLY WAY TO TELL A GOOD EGG IS TO BREAK IT OPEN AND TRY IT!

Now's the time to find out if good Bendix-Westinghouse compressors are as good as we've been telling you they are. Give us a trial order. Test them in your units this summer. Prove to yourself that the quality and dependability we've been talking about are really there!

Nobody wants all his eggs in one basket if he can be sure he can depend on the second basket. Our claim is that our product is a good product, that our company is a good company, that our price is a good price. You already know that the company is good and that the price is right.

Trying it is the only way you're going to find out about the compressor. Many manufacturers have already done so. The results have proved to them as they will to you that Bendix-Westinghouse compressors are dependable.

Call John Morrill, General Manager, or Don Wood, General Sales Manager, to get a trial order going now for summer test. Telephone HArrison 4-6471—Evansville, Ind. Evansville Division, Evansville 11, Indiana.

Export Sales: BENDIX INTERNATIONAL
205 East 42nd Street, New York, New York

EVANSVILLE DIVISION of
Bendix-Westinghouse
Automotive Air Brake Company

For more information about products advertised on this page use Information Center, page 38.

Masses 42 Room Units In Store, Induces Inquiries

WEST NEWTON, Mass. — A mass display of 42 Fedders room air conditioners has been set in the middle of Lee Loumos Television's 2,000-sq. ft. store in an effort to move as many units as possible before the air conditioning season opens.

Designed as an attention-getter, the display "practically makes customers maneuver around it" and nearly everyone inquires about the room units, it was disclosed.

They are told that in order for the store to buy in such quantities, it has to take the bulk of the units early in the year rather than at the height of the season when room air conditioners are apt to be in short supply. Also, it was explained that customers "will get more satisfactory" service at this time of year than in midsummer when the rush is on.

Payment is not due until late spring on the units and installation is delayed until then if the customer wishes. If the air conditioner is to be paid for on the instalment plan, first payment is not due for three months.

Firm's Top Room Unit Salesman Can Win Plane, Boat, or Car

ST. JOSEPH, Mich. — The grand prize winner of an "RCA Whirlpool" room air conditioner "Sales-Maker" contest for dealers and dealer salesmen, may take his choice of a "Champion" airplane, a "Chris-Craft" cabin cruiser, or a "Mercury" station wagon, according to J. B. Ogden, general manager for RCA Whirlpool air conditioners of Whirlpool-Seeger Corp., local manufacturing company.

Twelve weekly Sales-Maker contests, which test sales knowledge, began March 15 and end May 31. The grand prize will be awarded to the winner of the last of the weekly contests. Prizes for the earlier contests include electric shavers, hobby and sporting goods, watches, home furnishings, and traveling bags.

Contest entrants will receive a mailing each week giving sales tips and explaining product features of RCA Whirlpool room air conditioners. A number of entrants will be quizzed by telephone on information given in the mailing, it was explained.

Those answering questions correctly will receive prizes, the executive pointed out.

Step-by-Step Installation of Philco 'Bantam 12' Room Air Conditioner

STEP NUMBER ONE in installation of Philco Corp.'s new "Bantam 12" ¾-hp., 7½-ampere room air conditioner is shown here. The handyman is tightening the base plate to which the new lightweight unit will be attached. Bantam 12 weighs 120 lbs., measures 12⅞ by 24¾ by 13⅛ in., claimed to be the smallest made.

STEP TWO is shown here. The handyman places the small room unit between the mounting brackets and tightens the bolt to hold it in place.

STEP THREE is sliding side panels into place between the unit and the window frame. The gasket is placed along the top as shown here. Then bring the window down against the gasket.

R. I. Distributors Kickoff Co-op Room Unit Ad Push

PROVIDENCE, R. I.—Earliest kickoff of cooperative advertising by state distributors of room air conditioners was made here recently with the first of a series of eight newspaper ads.

About two thirds of a page in size, the ads will run before the end of May in this promotion designed to build early interest in air conditioning in hope it will reduce the installation jam that usually occurs at the first sign of hot weather.

Last year 4,970 room air conditioners were sold in the state, not including Remington or Sears Roebuck units, according to figures of the Rhode Island Electrical League. It is through the league that dealers conduct the ad campaign.

Reporting distributors last year showed a gain of 43% over the 3,461 room air conditioners sold in 1955, a record year.

Dealer 'Tells Truth' on Room Cooler Capacity

SAN ANTONIO — A local dealer started his room air conditioner advertising campaign early with an ad "telling the truth about room units."

F&W Sales Co.'s ad in a local newspaper featured the B.t.u. rating of a Carrier room unit. L. A. Fulenwider, Jr., operator of the store, said he would advise customers of the B.t.u. ratings for any brand that makes the figures available.

The ad read in part: "F&W Tells you the Truth about room air conditioners. This Carrier 1-ton model 51A5 delivers . . . true 14,500 B.t.u.h. on ARI Ratings."

now . . . a new and better Kool-Pak* capacitor assembly

unique plug-in design for air conditioners

Here's a complete motor-start, motor-run capacitor assembly in the smallest possible space, with two Sprague capacitors perfectly matched to your own requirements.

It provides your customers with a more economical air conditioner that lasts longer, needs less service . . . and costs you less to manufacture.

Completely exposed, the capacitors in every Kool-Pak assembly last up to two to three times longer than they would stuffed into conventional box packages. Internal heat is dissipated quickly by conduction and convection so that both the Clorinol® and the electrolytic capacitors are always far cooler. And another long-life advantage —there is no trapped moisture to corrode metal cases and parts.

Kool-Paks cost you far less because there's no outer box to pay for, no special leads or terminals to buy for interconnecting multiple capacitors. Another plus for Kool-Paks is the easier installation and easier field servicing.

Standard Kool-Paks are available for air and water-cooled 1¾, 2, 3, and 5 ton air conditioners. Mounting dimensions are identical with those of most present box capacitor assemblies. Control relays may be mounted inside the Kool-Pak junction box.

Complete information on new Sprague Kool-Pak Plug-in Assemblies for your air conditioners is available on letterhead request to the Technical Literature Section, Sprague Electric Company, 63 Marshall St., North Adams, Massachusetts.

Sprague on request will provide complete application engineering service for optimum results in the application of motor-start and motor-run capacitors.

★Trademark

the mark of reliability **SPRAGUE**®

Export for the Americas: Sprague International Ltd., North Adams, Mass. CABLE: SPREXINT

ARI Program Features 3 Speakers At Hot Springs Meeting May 6 to 8

WASHINGTON, D. C. — The Air-Conditioning & Refrigeration Institute has announced the program for its annual meeting to be held May 6-8 at the Homestead, Hot Springs, Va.

Featured are three speakers: J. Lewis Powell, program coordinator, Office of the Assistant Secretary of Defense; Harry Bund, vice president, Research Institute of America; and Ernest Robert Rosse, world traveler, humorist, and philosopher.

Speaking on "The Collapse of Time," Powell will discuss the time element involved in production and mobilization planning. Bund, an authority on marketing and research, will talk on "The Marketing Concept." Both will address the annual meeting Tuesday morning, May 7.

Rosse will speak at the annual banquet Monday evening on "The Safety Valve of Sanity."

Meetings of 13 product-sections and two ARI committees will be held during the three-day session, preceded by a meeting of the board of directors on Sunday, May 5. A special program of activities for ladies accompanying ARI members and guests is being arranged.

On Monday morning, meetings of the Government Relations Committee and the following sections will be held: Air-Conditioning and Refrigeration Systems; Flow Control Valves; Refrigerants, Lubricating Oils, and Chemicals; Room Air Conditioner; Small Compressor; and Tubular Products.

The Heat Transfer, Temperature Controls, and Valves, Driers, Fittings, and Accessories Sections will meet Tuesday afternoon, and the Exposition Committee Tuesday evening. Meetings of the Cooling Tower, Self-Contained and Residential Air-Conditioner, Self-Contained Ice-Maker, and Water Cooler Sections will be held on Wednesday morning.

Housing Bill--

(Concluded from Page 1, Col. 2)

In addition, formal opposition by the veterans panel is considered a major blow to the bill, presented as the Democratic housing program for 1957.

The omnibus bill would set up a veterans preference scheme within the Federal Housing Administration, authorize $1 billion more housing credit for the Federal National Mortgage Association, lower minimum FHA down payment requirements, and channel $1 billion of the National Service Life Insurance reserve fund into purchasing GI mortgages.

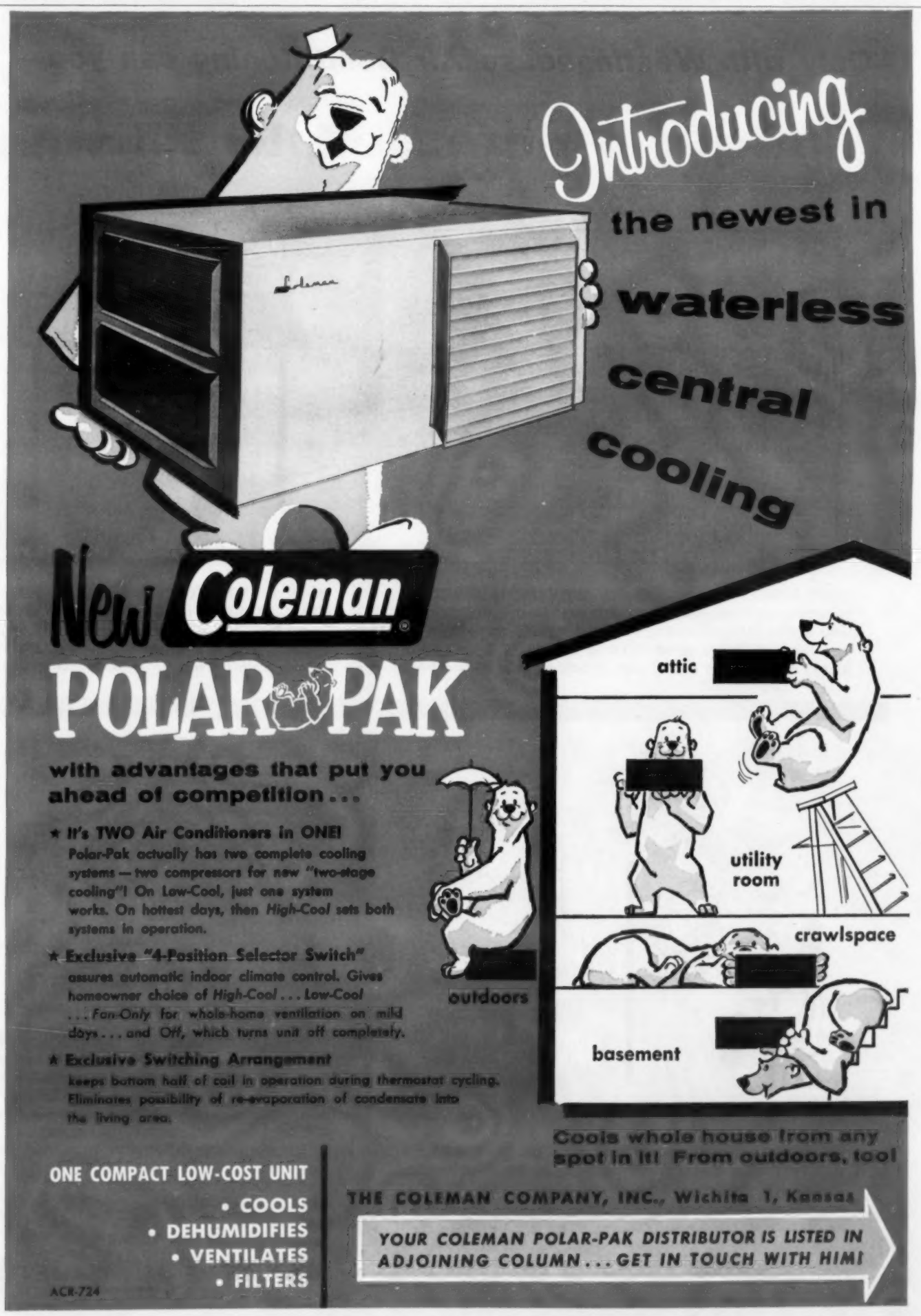
Along with that the House Banking committee voted more money for slum clearance and military housing, and to provide $300,000 a year for two years for a special farm housing research program. By a 22 to 3 vote, the committee adopted with only minor amendments the bill cleared by a Banking subcommittee.

Then, by voice vote with only two dissents, the House Veterans committee agreed to object to all sections of the measure dealing with veterans. These provisions, also opposed by the Administration, made up the heart of the bill. With Democrats as well as Republicans on the Veterans committee lined up against the measure, a Congressional housing expert predicted Administration forces may succeed in blocking passage of the bill.

Use of GI insurance funds for purchasing mortgages under the FHA veterans preference program brought Administration threats of a veto.

The bill would set minimum down payment terms for home mortgages insured by the FHA at 4% on the first $10,000 of appraised value, 20% on the value between $10,00 and $16,000, and 30% on the value above that to $20,000. The subcommittee had recommended a 5% down payment on the first $9,000 of appraised value and 20% on the value above that. Present rates are 5% on the first $9,000 and 25% above that.

However, under the proposed Banking committee bill, the minimum for veterans would be half the requirement for others. The Veterans Administration now requires a 2% down payment on GI loans. FHA officials had objected to the preference program, contending the VA should handle all GI housing programs.


Introducing
the newest in
waterless
central
cooling
New Coleman
POLAR-PAK
with advantages that put you ahead of competition...
★ It's TWO Air Conditioners in ONE! Polar-Pak actually has two complete cooling systems — two compressors for new "two-stage cooling"! On Low-Cool, just one system works. On hottest days, then High-Cool sets both systems in operation.
★ Exclusive "4-Position Selector Switch" assures automatic indoor climate control. Gives homeowner choice of High-Cool ... Low-Cool ... Fan-Only for whole-home ventilation on mild days ... and Off, which turns unit off completely.
★ Exclusive Switching Arrangement keeps bottom half of coil in operation during thermostat cycling. Eliminates possibility of re-evaporation of condensate into the living area.
outdoors
attic
utility room
crawlspace
basement
Cools whole house from any spot in it! From outdoors, too!
ONE COMPACT LOW-COST UNIT
• COOLS
• DEHUMIDIFIES
• VENTILATES
• FILTERS
ACR-724
THE COLEMAN COMPANY, INC., Wichita 1, Kansas
YOUR COLEMAN POLAR-PAK DISTRIBUTOR IS LISTED IN ADJOINING COLUMN ... GET IN TOUCH WITH HIM!

POLAR-PAK
DISTRIBUTORS

ALABAMA—Alabama Appliance Co.
First Ave. N. at 13 St., Birmingham
ARKANSAS—Gunn Distr. Co., Inc.
1801 E. 22nd St., Little Rock
CALIFORNIA—The Coleman Co., Inc.
6480 Flotilla St., Los Angeles
250 Sylvester St., So. San Francisco
COLORADO—B. K. Sweeney Co., 1601 23 St., Denver
CONNECTICUT—Roskin Distr., Inc.
275 Park Ave., East Hartford
D. C.—Noland Co., Inc., 136 K St., N. E., Wash.
FLORIDA—Eckles Distributors
1707 Industrial Blvd., Jacksonville
J. D. Johnson Co., 16 W. Gregory, Pensacola
I. W. Phillips & Co., P. O. Box 400, Tampa
GEORGIA—Appliances, Inc., Box 1612, Atlanta
ILLINOIS—The Coleman Co., Inc.
2201 So. Darst St., Peoria
Robert Barclay, Inc., 1234 W. Fulton, Chicago
INDIANA—Great Northern Distr., Inc.
1117 Maumee, Fort Wayne
Central Supply Co., 210 S. Capitol, Indianapolis
Great Northern Distr., Inc.
209 College St., South Bend
IOWA—Midwest-Timmermann Co.
114-116 Western Ave., Davenport
Sidles Co., 8 Seventh St., Des Moines
KANSAS—Coleman Heating & Air Conditioning Co.
P. O. Box 2060, Wichita
KENTUCKY—Valley Distr. Co., 912 Baxter, Louisville
LOUISIANA—Walther Bros. Co., Inc.
1722 Poydras at Willow St., New Orleans
MAINE—Nelson & Small, Inc., 68-78 Union, Portland
MASSACHUSETTS—Bigelow & Dowse Co.
2nd Ave. & A St., Needham Heights
MICHIGAN—Semmler Wholesale Supply Co.
5100 St. Jean, Detroit
J. E. McMurray Distributing Co.
212 Grandville Ave., Grand Rapids
MINNESOTA—Kelley-How-Thomson Co.
309-349 S. 5th Ave., W., Duluth
MISSOURI—Coleman Htg. & Air Cond. Co.
1219 Union Ave., Kansas City
Hollander & Co., Inc.
3900 W. Pine Blvd., St. Louis
General Wesco Distr. Co.
P. O. Box 271, MPO, Springfield
MONTANA—Marshall-Wells Co., Box 2092, Billings
NEBRASKA—Sidles Co., 7302 Pacific St., Omaha
NEW MEXICO—Albuquerque Lumber Co.
501 N. First St., Albuquerque
NEW YORK—Roskin Bros., Inc.
1827 Broadway, Albany
Lee Distr. Co., 845 Washington St., Buffalo
Jericho Distr., Inc., Route 25, Centereach, L.I.
Roskin Bros., Inc.
115 Wisner, Middletown
Sey-Ber Distr. Co., Inc.
104 W. Division St., Syracuse
NORTH CAROLINA—Southern Appliances, Inc.
P. O. Box 2096, Charlotte
NO. DAKOTA—Minot Coleman Distr., Box 969, Minot
OHIO—Miami Valley Distr., 8 N. Keowee, Dayton
Hughes-Peters, Inc., 1128 Sycamore, Cincinnati
Shuler Distr., 2114 Woodland Ave., Cleveland
Hughes-Peters, Inc., 111-17 E. Long, Columbus
The Joseph B. Smith Co., 1945 Franklin, Toledo
OKLAHOMA—Paul W. Davis Co.
825 N. W. 2nd, Oklahoma City
OREGON—Western Utilities Supply Co.
1905 N. Williams Ave., Portland
PENNSYLVANIA—The Coleman Co., Inc.
133-43 W. Hunting Park Ave., Philadelphia
L/H Appliance Wholesalers
930 Manchester Ave., Pittsburgh
RHODE ISLAND—Lenz-Knight Co., Inc.
200 Conant St., Pawtucket
SOUTH DAKOTA—L. C. Lippert Co.
506 S. Cliff Ave., Sioux Falls
TENNESSEE—Indoor Comfort Distr.
520 Van St., N. W., Knoxville
Forsyth-Williams, Inc.
34 N. Lauderdale, Memphis
TEXAS—Amarillo Hardware Co.,
600 Grant St., Amarillo
Paul Davis Co., P. O. Box 10102, Dallas
W. G. Walz Co., 500 San Francisco St., El Paso
South Texas Appl. Corp.
641 S. Flores St., San Antonio
Warren Distr. Co., 205 Velasco St., Houston
VIRGINIA—R. F. Trant Distr. Corp., Box 300, Norfolk
WASHINGTON—Western Utilities Supply Co.
P. O. Box 3524, Seattle
Hughes & Co., Inc.
South 119-123 Howard St., Spokane
WEST VIRGINIA—Van Zandt Supply Co.
1123 Fourth Ave., Huntington
WISCONSIN—Wisc. Heating Distr.
4715 N. 32nd St., Milwaukee

LEFT: Two-story, 12-room residence in Mamaroneck, N. Y. is divided into four zones for air conditioning.

LEFT: Room thermostats through special control panels to obtain two-stage cooling and single-stage heating control room units.

3 Air-Cooled Water Chillers Combine with Forced Hot Water To Condition 12-Room Home

MAMARONECK, N. Y.—Divide a 12-room two-story residence into four zones, combine three 3-hp. air-cooled water chillers in parallel, add a custom-engineered control system, and you have the basic ingredients of an air conditioning system engineered and built for the new home here by A. Brown Products Corp.

The home was designed by Gustave Iser, A.I.A. of New York City. It combines the packaged water chillers with a forced hot water system for year-round operation.

Separate Control Of Four Zones

Upon determining the different load characteristics in different areas, Jack Aronczyk, Brown Corp. engineer, decided upon four zones which would require separate control. The zones are: 1) the upstairs sleeping quarters; 2) the downstairs sleeping area; 3) the living room-dining room area; 4) the kitchen-guest area.

A fifth zone, the servant's quarters, receives manually controlled air conditioning, and is not part of the automatically controlled cooling system used in the rest of the house.

Estimated 11-Ton Heat Load

The three 3-hp. air-cooled water chillers were installed to meet an estimated 11-ton heat load. The floor area totaled 3,800 sq. ft.

One zone in particular required special attention. This zone, the living-dining area, had, in one wall, approximately 400 sq. ft. of glass area. This glass faces a glaring white terrace which leads to the water of Long Island Sound, some 100 ft. beyond.

On a bright, calm summer day, the added reflection of sun's rays from the terrace and the water had to be taken into account.

Each zone, therefore, was provided with an individual control system, which permitted the zones to be cooled or heated in response to their respective thermostats.

In order to meet the cooling load, under multi-zone control, Brown Products used three of its model BWC-31 3-hp. packaged air-cooled liquid chillers. Placed side by side in the basement, the units provide capacity modulation by virtue of difference in settings on their operating water temperature controls.

The room units, fan-coil type, have a two-speed motor and are controlled by room thermostats through special control panels to obtain two stage cooling and single stage heating. Typical cooling operating conditions are as follows:

1) Thermostatic setting 78° F., zone temperature 78° F., or higher. Under these conditions the motor fans operate at high speed until—

2) the zone temperature falls

(Concluded on next page)

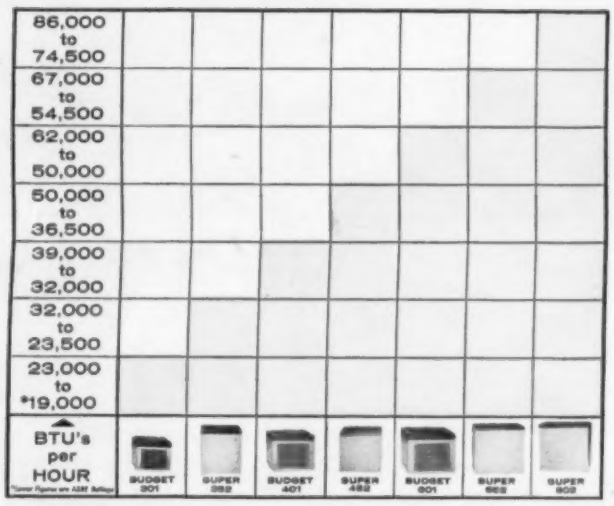
RIGHT: Three 3-hp. air-cooled water chillers in parallel air condition the house.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

Place your ad today!

Only with Westinghouse Air Conditioning can you—

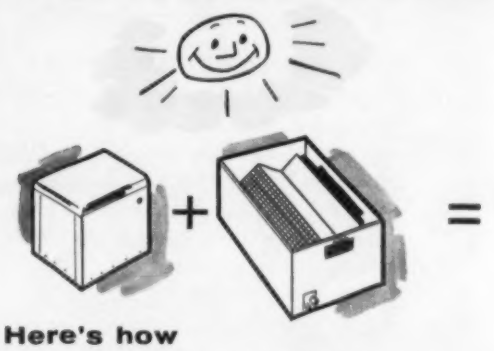
Price, Sell, Profit with



"JUST RIGHT" COOLING MEANS "JUST RIGHT" PRICING! Now, Westinghouse gives you 7 different air cooled condensing units to beat old-fashioned 2, 3, and 5 HP competition! You get a complete cooling range of 19,000 to 86,000 BTU's per hour in Budget and Super air cooled units to beat all price competition!

YOUR ANSWER TO OVER-RATED OR UNDER-CAPACITY COMPETITION. Competitors who *try to sell* all prospects, regardless of need, with only 3 inflexible units are forced to bid a 5 HP price on many 3½ HP jobs . . . or hope that an under-

WHEREVER YOU SELL, YOU CAN MASTER HEAT AND HUMIDITY. If your market is like sweltering St. Louis or bone-dry Tucson . . . you'll have a big edge over competition. You can master *both* the heat and humidity, while you underbid the toughest price competition with "Just Right" air conditioning.



Here's how Westinghouse delivers "Just Right" cooling capacity:

AIR COOLED CONDENSING UNITS. These handsome beige-and-charcoal cabinets house most moving parts—compressor and fan—outside the home. Exhaust air up and away from the house for efficient "*whisper quiet*" cooling. One of these 7 basic units combines with the one best . . .

COOLING COIL. Vertical, horizontal or blower coil unit—available in a complete range of capacities. To give each of your customers . . .

J-80541-A

YOU CAN BE SURE...IF IT'S

For more information about products advertised on this page use Information Center, page 38.

Custom Air Conditioned Home--

(Concluded from preceding page)

to between 78° F. and 75° F. while the thermostatic setting is still at 78° F., then the motor fans are automatically reduced to low speed.

3) When the room temperature is 75° F., the motor fans stop operating.

Summer-Winter Thermostat

The exclusively-designed Minneapolis-Honeywell control system consists of a special summer-winter thermostat. It actuates a control panel consisting of a transformer and three relays wired in combination to obtain the prescribed operation.

Self-contained, the packaged liquid chillers have a refrigeration mechanism which is entirely hermetically sealed.

According to the manufacturer, the air-cooled condenser consists of an oversized coil, constructed of copper tubes with aluminum fins, designed for high ambient temperatures. Its centrifugal blower, driven by capacitor type motor, has variable pitch pulleys.

Ad, Sales Promotion Firm To Push Cooling, Heating

NEW YORK CITY—A new organization has been formed to provide the heating, plumbing, and air conditioning industries with an advertising and sales promotion service.

Copy Lancers, located at 225 W. 12th St. here, is comprised of a "team" of copywriters and engineers with diversified agency and manufacturer backgrounds. They will specialize in creating brochures, booklets, dealer kits, catalogs, sales letters, specification sheets, and point-of-sale materials.

Allegheny RACCA-UA Develop Apprenticeship Program To Train Commercial Journeymen

PITTSBURGH — Members of the first local class of service apprentices in the refrigeration field were honored recently by their sponsors—the Refrigeration & Air Conditioning Contractors Association of Allegheny County—at a testimonial dinner which also honored the retired secretary-treasurer of of Local 449, United Association, Leo A. Green, at Gateway Plaza restaurant here in Gateway Center.

This first class of apprentices trained to be servicemen became possible when the local, and the contractors association—finding the latter was unable to get enough properly trained commercial servicemen in refrigeration unless it paid for the training — "mutually-developed" an apprenticeship program "for training and developing light commercial refrigeration journeymen."

We are attempting, reports J. A. Marchase, president, Marchase Refrigeration, speaking for contractors, to train adequately in all phases of commercial refrigeration servicemen who have been working in the field during the day.

Covers 3 or 4 Training Years

New training program, says Marchase, is set up to cover three of four years of training with a minimum of 144 hours training per year. Classes are being held during the public school year. They begin in September and finish the last week of March.

Training program was organized by a committee comprised of four union members — and contractors Robert B. Weston of Weston Sales and Service; Robert F. Haas, Jr. of Haas Sales & Service; H. S. Alexander of Refrigeration Services, Inc.; and Marchase.

Contractors of Allegheny County and vicinity, who had wanted a training arrangement for two years, Marchase explains, finally developed "an apprenticeship program for training and developing light commercial refrigeration journeymen" with "the following wage rates applicable:

Wage Rates

First year—40% of the light commercial refrigeration journeyman's wage rate; second year—60% of the wage rate; third year—80% of the wage rate; fourth year—the apprentice passes the examination and then gets the light commercial refrigeration journeyman's wage rate.

Agreement

"The Light Commercial Refrigeration Apprentice," the agreement reads, "will be on probation for the first six (6) months. The Light Commercial Refrigeration Apprentice during his first year shall not be allowed to work on any job outside the shop unless he is accompanied by and under the direction of an 'A,' or 'B' Commercial, or 'B' Domestic, Journeyman, except for the handling, installation, and servicing of window ventilating units, individual hermetically sealed domestic refrigeration units, and household appliances.

"Thereafter, the Apprentice may, in an emergency or on approval of the Union, work alone on the servicing of any appliance or product on which he has received adequate training and acquired sufficient knowledge to satisfactorily perform such service.

"A joint Apprentice Committee, established by the Association and Local Union No. 449," the agreement points out, shall be in charge of the education and examination of Light Commercial Refrigeration Apprentices and be responsible for the details of the Apprenticeship Program.

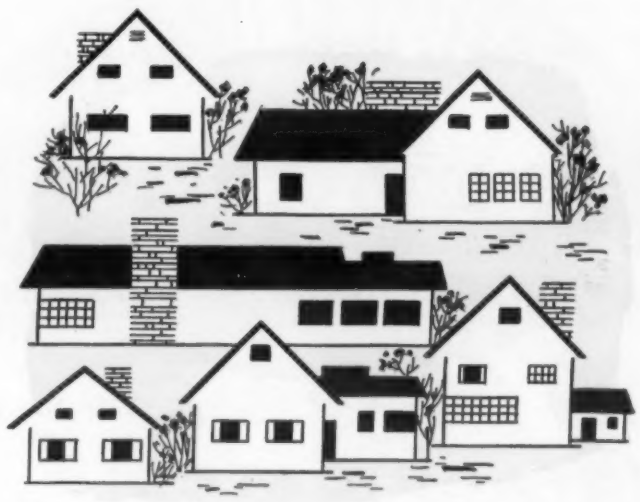
"The Employer will pay into an Apprenticeship Fund the sum of five (5) cents per hour for each hour worked by each Light Commercial Refrigeration Apprentice employed by him to help pay the cost of such Program. Any additional expense incurred in this program shall be pro-rated through the Joint Apprentice Committee.

"Each employer having two or more employes," the agreement concludes, "shall be entitled to a minimum of one (1) Light Commercial Refrigeration Apprentice. An employer having six (6) steady employes shall be entitled to an additional apprentice and thereafter an additional apprentice for each six

(Concluded on next page)

"JUST RIGHT" cooling capacity!

powered unit will not bring complaints. With Westinghouse you have no "*too much or too little*" problems. You can close each sale with cooling capacity that's "Just Right" for the job and you can do it profitably!



THERE'S NO SUCH THING AS AN AVERAGE HOUSE. It's a fact! Cooling requirements differ with each house. Size, style, exposure, local climate, size of family all make a difference. And only with Westinghouse can you install the one unit that is "Just Right" for each home . . . while competitors *try to sell* all prospects with rigid 2, 3 or 5 HP equipment.

COMPLETE HOME COOLING. Maximum comfort throughout the house—24 hours a day during hottest summer weather. Proper mastery of both heat and humidity that only "Just Right" air conditioning can deliver.

Plus Fast delivery, sales training, finance plans, technical aid, local advertising, sales promotion, matching gas and oil-fired furnace line, profits—and more! These are just a few of the reasons why a Westinghouse Franchise is valued as the "Franchise With The Future" by leading dealers and contractors across the nation.

Westinghouse AIR CONDITIONING DIVISION • STAUNTON, VIRGINIA

Apprenticeship Program--

(Concluded from preceding page)

(6) additional steady employes with a maximum of three (3) apprentices to a shop. It is agreed that any contractor employing apprentices under these conditions will provide steady employment for the apprentices."

Finding apprentices to train was not difficult, Marchase continued. Fifteen trainees—none could be over 21 years of age—where screened jointly in one evening by both union and contractors from among almost 40 local applicants whose names the union had on file.

Some applicants previously had gone to refrigeration school, some had practical experience, some had worked in the mills, some were sons of members of the contractors association, two or three were sons of refrigeration mechanics.

Most important part of the training program is comprised of (1) lectures on commercial refrigeration equipment now in use, and teaching on manufacturers' periodic changes in equipment as the lectures progress; (2) attendance at factory schools whenever they come into this area during the day.

Expect To Have Well-Equipped Shop

"Before long," says Marchase, "we expect to have in addition to our classroom work, a shop well-equipped with donated manufacturers' equipment for our use in teaching the shop work of the course."

The contractors solved previous teaching problems by getting a teacher with extensive practical experience.

In the past, teachers covering this type of instruction had been educators who had little practical experiences themselves in service work, and thus in their classroom teaching they had presented mostly theory. Their classes as a result had turned out mostly refrigeration installation men, not refrigeration servicemen.

"We do train 25 installation men per class under our regular full-year steamfitters training program which each year moves forward into advanced work," Marchase explains, "but in that program we lack the time to teach service."

In this new training program the contractors enlisted teachers (one teacher has taken a training course in refrigeration service at Purdue university) with much practical experience to streamline the course and concentrate on practical applications in refrigeration service.

One class instructor, Joseph Tomanio of Marchase Refrigeration, has teaching credits from the school of education, University of Pittsburgh, plus 20 years' experience teaching in refrigeration schools in this area.

Classes are taught two nights a week from 7-10 at Washington Vocational high school under Regis Aiken, newly-elected secretary-treasurer, Apprentices Association.

First class of apprentices who had completed their serviceman's training was greeted at the dinner at Gateway Center by RACCA's executive secretary W. D. "Bud" Armour.

Trainees 'Chosen For Ability'

Armour introduced Marchase, who told the trainees they originally had been selected for the training because of their ability and they were persons who would do justice to the industry. They must observe all the disciplines of teacher, employer, and the union; and carrying out these principles must reflect well on the public at large.

With the proper training and attitude, Marchase told the class, there was "no telling" how far they could go in the industry. Most of the refrigeration employers present at the meeting started as learners, became journeymen, and finally became owners of companies, he said.

The same door through which the employers had come, Marchase continued, now was opening to these refrigeration servicemen, but in a much easier manner because the servicemen now were being trained properly by instructors who know the business, have had practical experience, and have shown them how to avoid many of the hard knocks.

"By discipline, by your manner, and by your actions," Marchase concluded, "you can progress from here."

Near the end of the testimonial dinner, Weston, acting for the association, presented Green with a clock-radio.

Local RACCA members are Edward G. Miller, Danforth Corp., president; Hass; Peter J. Joyce, Joyce Refrigeration and Equipment Co.; J. R. Ruthrauff, Jr., J. R. Ruthrauff Jr. & Associates Inc.; A. G. Koenig, Koenig Refrigeration Co.; Marchase; George A. Ley, Jr., Alsen-Ley Co.; H. A. Alexander, Refrigeration Services, Inc.; Paul D. Sack, Sack Store Fixtures Co.; and Weston.

Bell & Gossett Ups Boone, Meeg In Sales

MORTON GROVE, Ill.—R. E. Moore, president of Bell & Gossett Co., has announced advancement of W. A. Boone from sales manager to vice president in charge of sales and A. B. Meeg from assistant sales manager to sales manager.

W. A. Boone

A. B. Meeg

Boone has been with the company for over 15 years. He became assistant sales manager in 1948 and in 1954 was made sales manager. Boone is an officer of the company and a member of the board of directors.

Meeg joined Bell & Gossett in 1949. He was manager of national accounts for five years and in 1954 became assistant sales manager.

Payne Holds Dealers Sales Get-Together

FRESNO, Calif. — A sales engineering meeting for dealer personnel representing Payne Div. of Carrier Corp. was held March 11 in Fresno at the Hacienda motel.

Features of the program were setting up units, soldering, and checking out cooling units with manifold gauges. There was also a review and touch-up on the Payne heating and air conditioning manual, according to Robert North, manager for northern California.

Air Conditioning, Ordering, Installing, Maintaining – Now Made Easier For You . . .

SATISFABRICATED by GOVERNAIR SCU

Yes! SATISFABRICATED! ©

It's our way of telling the world that Governair Products are guaranteed to satisfy the widest range, the most exacting capacities, and the most truly unusual space requirements.

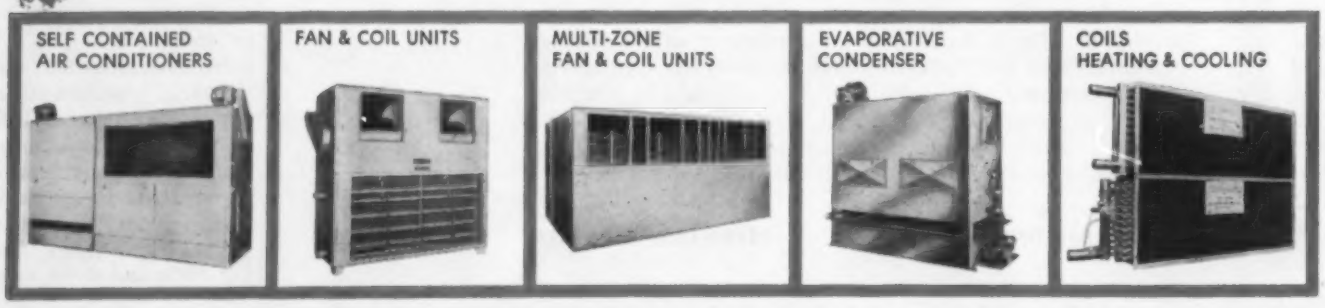
Governair offers a SPECIAL saving of time and trouble with its complete line of Self-Contained Units. They're easier to order, since you specify only one unit in place of picking several components. Easier to install, too, since they are delivered fully tested and ready to operate with simple electrical, water and duct connections.

Best of all, Governair's quality engineering and construction assure you of lower cost maintenance so important to the purchaser.

WRITE OR CALL FOR DETAILED INFORMATION.

GOVERNAIR CORPORATION
4840 NORTH SEWELL
OKLAHOMA CITY, OKLA.

GOVERNAIR



For more information about products advertised on this page use Information Center, page 38.

Dealers, Salesmen Sell 1,359 Freezers, Collect $5,200 In Silver Dollar Bonuses In Utility's 4-Week Promotion

NEW YORK CITY—An unusual food freezer promotion with a cash bonus idea that dealers and dealer salesmen put their OK on was sponsored last year by Northern States Power Co.

Reporting on it in Edison Electric Institute's *Sales Planner,* Byron W. Hanson, residential sales manager of NSP, said there were four objectives in the promotion, all of which were met.

First was "to sell a minimum of 1,000 food freezers in a four-week period; second, to conduct at least 100 public freezer demonstrations during the promotion; third, to promote greater tie-in with NSP's 'Bargain Day' newspaper advertising; and last, to furnish and encourage freezer store and window displays with appliance dealers in NSP's retail electric towns."

How did all this work out? asks Hanson. "We think the results give the answer."

More than 150 sales demonstrations were held in cooperation with dealers in stores, churches, and group meetings, he reported. "We believe these demonstrations were a major factor in producing freezer sales during the campaign period, and furthermore created customer interest for future prospects."

Dealers and salesmen sold 1,359 freezers and collected cash bonuses totaling $5,264. Over 12,300 persons watched demonstrations, said Hanson, while 266 dealers and 426 salesment participated in the campaign during the four weeks.

A cash "spiff" was provided dealer salesmen. It was to be paid in silver dollars. For each sale of a food freezer made and reported by an appliance salesman, NSP offered one chance to determine the amount of his cash spiff.

Dealer sales representatives carried one jumbo die while visiting freezer salesmen in their stores, continued Hanson. For each sale made and reported on forms provided by the utility, the salesman was allowed to roll the die once. He was then paid a cash spiff in silver dollars by the sales representative, equal to the number that turned up on the die face. Thus, a salesman was paid from one to six dollars for each qualified sale made.

Dealer tie-in advertising was 42% greater during the promotion than during the same period in 1955, Hanson stated. And dealers "took advantage" of EEI 12-piece window and store display materials and 10 handout pamphlets on freezers which used the slogan "Freezer Living Is Leisure Living" to identify the store as freezer headquarters.

"We at Northern States Power feel this activity was entirely satisfactory and plan to repeat in July this year," Hanson declared.

NEMA Appoints Smith, Nims To Head Sales Promotion, Engineering

NEW YORK CITY—Roderic D. Smith and Roland L. Nims have been appointed to direct sales promotional and engineering activities of certain sections of the National Electrical Manufacturers Association, it was announced by Joseph F. Miller, managing director of NEMA.

These activities were formerly handled by the late Leo K. Fox, who died Nov. 27 of last year.

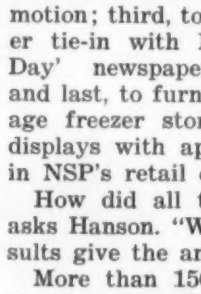
Both Smith and Nims have been members of the NEMA staff for several years.

Smith will be recording secretary, Major Appliance Div., and of the division's constituent sections: Electric Range, Electric Water Heater, Household Refrigerator and Freezer, Household Sink Units, and Dehumidifier. In addition, he will continue as recording secretary of the NEMA Switchgear Section.

Nims will be recording secretary, Electric Housewares, Electric Fan, and Commercial Cooking Equipment sections. He will continue as recording secretary of the NEMA Motor and Generator Section.

Cooling Firm Moves

OKLAHOMA CITY — Swan Air Conditioning, Inc. has moved into its new $200,000 building at 4601 N. Santa Fe.



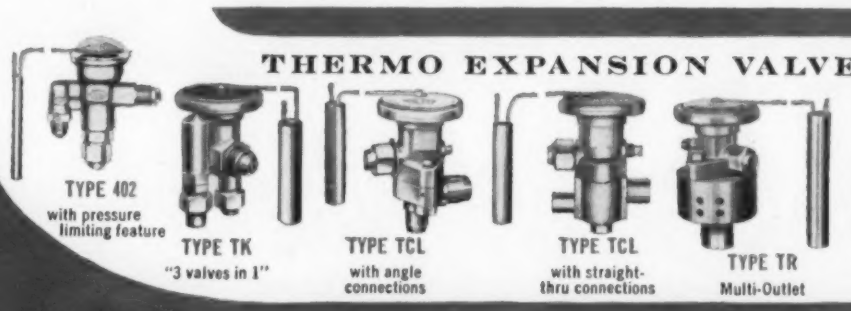
RICHCO PLASTIC CLAMP

Tops for OEM use

Shock and chemical resistant, non-corrosive, strong and durable. Lowest cost anywhere. All sizes—Let us quote your needs. All sizes from ¼" to 1¼".

RICHCO PLASTIC CO.
4445 Fullerton Avenue
Chicago 39, Illinois

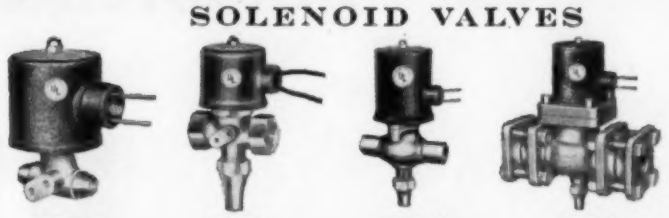
THERMO EXPANSION VALVES



TYPE 402 with pressure limiting feature
TYPE TK "3 valves in 1"
TYPE TCL with angle connections
TYPE TCL with straight-thru connections
TYPE TR Multi-Outlet

For automatic control of liquid refrigerant on all types of refrigeration and air conditioning systems. Capacities: From fractional tonnage to 200 tons Freon-12 and Freon-22; selective charges. Low temperature valves for -40° F. to -100° F.

SOLENOID VALVES



TYPE S1 TYPE S2 TYPE M3 TYPE R2

For all types of service. For liquid: Freon-12 up to 75 tons; 110 tons Freon-22. For suction: Freon-12 up to 10 tons; 15 tons Freon-22. For hot gas discharge, brine, water, steam, air or oil service.

ALCO

THE ONE COMPLETE LINE OF REFRIGERANT CONTROLS

VENTURI-FLO DISTRIBUTORS

Wide application range. One piece; replace distributors requiring as many as 6 or 7 nozzles.

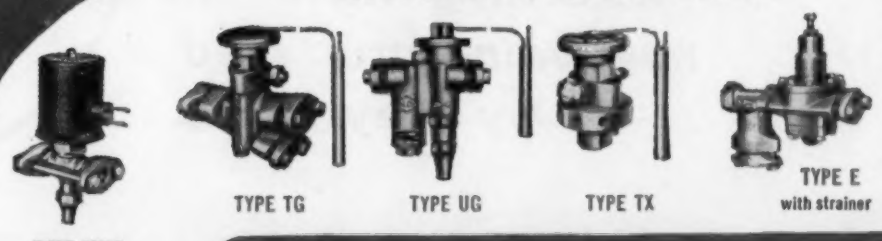
SUCTION LINE CONTROLS

TYPE 771-772 SUCTION PRESSURE REGULATORS (Hold-Back Valves) Prevent motor overload. -Freon-12, Freon-22.

TYPE EPR EVAPORATOR PRESSURE REGULATORS For all refrigerants, with connection sizes up to 6".

TYPE 760 "EVAPOTROL" Pressure regulator— ½ ton, Freon-12— ¾ ton, Methyl Chloride.

AMMONIA CONTROLS



TYPE M91F
TYPE TG
TYPE UG
TYPE TX
TYPE E with strainer

Solenoid Liquid Valves— up to 172 tons. Solenoid Suction Valves— up to 28 tons. Thermo Expansion Valves—from fractional tonnage to 125 tons. Automatic Expansion Valves—from fractional tonnage to 60 tons.

FLOAT VALVES AND SWITCHES

TYPE HK high pressure float valve. Up to 5 tons Freon-12, 8 tons Freon-22 and 20 tons Ammonia.

TYPE J56 electric float switch. For Freon, Methyl Chloride, Ammonia and other non-corrosive liquids having a specific gravity of .6 or more. Up to 230 volts AC or DC.

908 LECTRO-LEVEL electronic remote control of liquid level. Accurate control for full-flooded evaporators. Adjustable to a wide range of level changes. Easy-to-set control dials conveniently mounted in remote box.

7480

For capacities in excess of those listed, write us and give specific requirements.

SEE YOUR ALCO WHOLESALER

ALCO VALVE CO.
853 KINGSLAND AVE. • ST. LOUIS 5, MO.

ALCO ALSO OFFERS YOU Constant Pressure (Automatic) Expansion Valves—Reversing Valves—Liquid and Suction Line Strainers.

5 New Hotpoint Refrigerator-Freezers Feature 'Light Touch 'Safety Door Latch

CHICAGO—Five new refrigerator-freezers, three 12-cu. ft. and two 11-cu. ft. models, have been announced by Hotpoint Co. refrigeration department, for the spring selling season.

Company refrigeration officials said that the new refrigerator-freezers "will be offered in a wide range of suggested retail list prices to meet all competitive marketing conditions." Suggested list prices range from $329.95 to $499.95.

Deluxe combination refrigerator-freezer retailing for $499.95 is model 7EY-12, a two-door 12-cu. ft. model with a separate food freezer that holds 91 lbs. of frozen foods.

Additional features of this model include automatic defrosting, new pink interior, "giant size" all-aluminum dairy storage area, aluminum gliding shelves, "plus other features normally found on other deluxe refrigerator-freezers."

Single door combination refrigerator-freezer model 7EJ-12 retails for $459.95. This 12-cu. ft. model has a 75-lb. food freezer, automatic defrosting, rollers for easy moving for cleaning or decorating, all-aluminum dairy storage area, aluminum door shelves, and other deluxe features.

A single-door 11-cu. ft. refrigerator-freezer, model 7EJ-11, has a single-door 75-lb. food freezer. Automatic defrosting is another feature of the combination which retails for $419.95. Other features include steel shelves, aluminum door shelves, and aluminum trimmed crisper. Rollers are available as optional equipment.

Medium-priced combination model 7EF-11 that carries a suggested retail price of $379.95 is an 11-cu. ft. unit with a separate food freezer holding 75 lbs. of frozen foods. Rollers are optional on this model. Other features include those found on the more deluxe models (above).

The largest cubic foot volume refrigerator ever offered by Hotpoint in the low price field is model 7ED-12, a 12.3-cu. ft. unit with a separate 49-lb. food freezer. A full-width chiller tray provides an additional 17 lbs. of frozen food storage space. Other features include porcelained steel crispers, steel shelves, aluminum door shelves, and rollers as optional equipment. This model has a suggested retail price of $329.95.

All five refrigerators feature Hotpoint's new "light touch" safety door latch. Developed by Hotpoint, new non-magnetic device "makes refrigerator doors easier to open and close, and more important, childsafe," it was stated. This design was made possible by development of a new type of "accordion" door gasket, the company said.

In addition, some of the new spring line of refrigerators are available in five Hotpoint colors —blue, yellow, green, brown, and pink—as well as white, it was pointed out.

Three new deluxe automatic pushbutton ranges and one automatic rotary switch range were announced by Hotpoint's range department for the spring selling season. The line consists of two 39-in. ranges and two 30-in. ranges. All carry an open list price.

Admiral Cuts Colored Refrigerator Prices

CHICAGO — All Admiral refrigerators except three models are now available in a choice of colors at no additional cost, it was announced by J. R. Oberly, vice president-appliance division, Admiral Corp.

He said that while colored cabinets cost more to produce, the company is absorbing this charge to help increase the movement of colored refrigerators at the distributor, dealer, and consumer levels. Previously there was a $10 differential between the suggested list price of white and colored models.

Models D-950, D-1140, and D-1150 are not available in colors, but all other Admiral refrigerators will be offered in a choice of four colors.

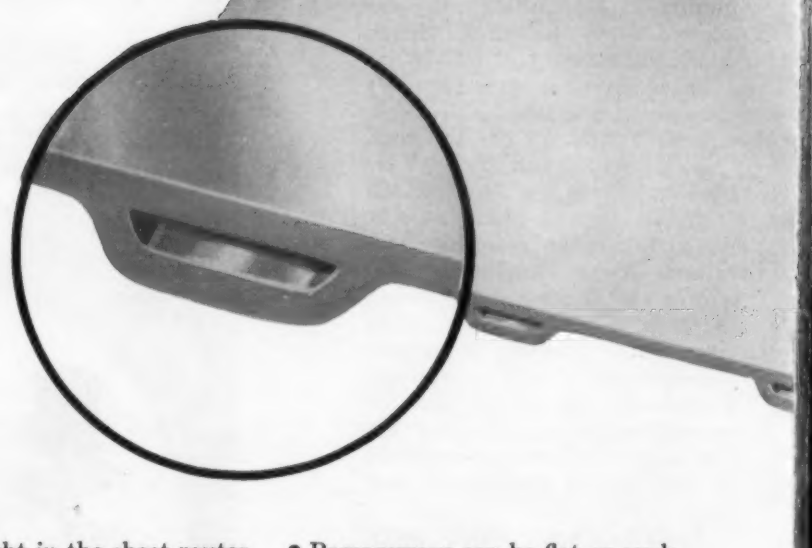
George E. Wagoner, Former Kelvinator Offical, Dies

WASHINGTON, D. C.—George E. Wagoner, former Kelvinator public utilities and REA manager, was buried recently in Arlington National Cemetery. He died in George Washington University hospital as a result of a lung condition.

Wagoner retired from active work with Kelvinator Div., American Motors Corp. in 1955, but had been retained as a special consultant in Washington. He was one of Kelvinator's oldest employes, having joined the company in 1926.

Performance proved by the

REYNOLDS



Check the Revolutionary Advantages of this Exciting Material *now being produced* by Reynolds

BETTER PERFORMANCE — MORE CONSUMER SELLING FEATURES

- Flat surfaces in evaporators permit direct contact with food packages, ice cube trays and other items providing heat transfer by conduction and completely eliminating any insulating air spaces. This aid to faster freezing also means a bigger consumer selling point for refrigerator and freezer manufacturers.
- Flat surfaces make it easier to defrost . . . improve drainage of water and other liquids . . . permit faster, easier, more thorough cleaning. More sales features!
- Flat surfaces permit small jars, bottles, cans and other containers to rest on smooth surface without wobbling or tipping, thus reducing possibility of spillage . . . still another good sales point.
- Flat surfaces mean no high points to concentrate wear on critical tube surfaces.

- Tubing right in the sheet routes refrigerant exactly where needed —no loss in conductivity. Tubed Sheet *One-Side-Flat* (two sheets of aluminum metallurgically bonded together so that the heat transfer passageways are in the sheet) is flat on one side and has the built-in tubing pattern on the other side.

NEW FLEXIBILITY OF DESIGN

- Reynolds new Tubed Sheet *One-Side-Flat* is the only sheet with one flat side providing integral tubing in any parallel or non-parallel patterns no matter how complex!
- Almost any tubing pattern that can be drawn on paper can be quickly and economically produced on Tubed Sheet with practically unlimited circuiting possibilities.
- Passageways can be flat or oval; large or small; spaced close together or apart.
- Redesigns are simplified, can be made quicker.

GREATER ECONOMY

- Eliminates metal used for evaporator tubing, accumulators and receivers.
- Many connecting and assembly operations are eliminated.
- Additional tubing lengths add nothing to cost.
- Redesigning costs are much less.

MORE ATTRACTIVE PRODUCT

- Can be embossed in a decorative pattern or left smooth.
- Can be color anodized in any color desired to match color-styled refrigerator and freezer interiors.

For more information about products advertised on this page use Information Center, page 38.

Talking Refrigerator Tells How To Live Better Electrically

CHICAGO—An over-size refrigerator which walks and talks will tell visitors to the Chicagoland Fair this summer how to live better electrically.

The fast-talking robot will parade up and down in front of a four-truck, $200,000 caravan which will be the exhibit of the Commonwealth Edison Co., according to Richard Revnes, director of the huge exposition to be held at Navy Pier in Chicago June 28-July 14.

Revnes said each of the big, specially built trailer trucks will tell a separate phase of the live better electrically theme.

Visitors who ascend stairways to stage areas on each truck will be able to trace the story of electrical power from its production to its best use in the home.

The first exhibit will show by means of diagrams how electricity is produced by atomic reactors, and, more conventionally, by steam. The second exhibition truck will show the right kind of wiring a home needs to take full advantage of the many appliances—from air conditioners to rotisseries—which make modern living easier.

A completely-equipped electric kitchen will form the third exhibit. The kitchen trailer includes a well-lighted sewing center and work table combination, a playpen, a damp closet with hose and sliding door, and built-in sink and oven.

The last exhibit of Commonwealth Edison will take Fair visitors into the living areas of the modern electric home to demonstrate correct lighting as well as how lighting may be used for decorative effects.

Featured in this display are two lamps which can be switched to emit light of varying decorative color hues—including gold, green, white blue, and pink.

If visitors have any questions, the talking refrigerator, like the barker of old, will be able to provide answers, according to Revnes.

refrigeration industry...

ALUMINUM TUBED SHEET

One-Side-Flat

(Patent Pending)

Tubed Sheet *One-Side-Flat* refrigerator evaporator. Note pattern on one side, other side smooth.

For full details on Reynolds Aluminum Tubed Sheet *One-Side-Flat*, contact your nearest Reynolds Office or write *Reynolds Aluminum Fabricating Service, 2053 South Ninth Street, Louisville 1, Kentucky.*

The Finest Products Made with Aluminum are made with REYNOLDS ALUMINUM

See "CIRCUS BOY", Reynolds exciting dramatic series, Sundays, NBC-TV

REYNOLDS ALUMINUM FABRICATING SERVICE

BLANKING • EMBOSSING • STAMPING • DRAWING • RIVETING • FORMING • ROLL SHAPING • TUBE BENDING • WELDING • BRAZING • FINISHING

For more information about products advertised on this page use Information Center, page 38.

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

pattern destroys individuality, the sociologists and philosophers mourn.

Individuality—the courage to act and think differently from "the herd"—is the imaginative ingredient which produces progress, they maintain.

As an example, they cite the fact that few children nowadays are bestowed original names. Back in the days when some of the world's greatest political and social thinkers — Franklin, Jefferson, Madison, Hamilton, Rousseau, Mill, Bason, Montaigne—flourished, parents gave their offspring baptismal names calculated to set them apart from the crowd.

Researcher Nathaniel Bowditch turned up some of these delightful dillies from that era: Hate Evil Nutter, Joy Againe Sutter, Faint Not Wine, Hardbottle Grimston, Savage Bear, Opportunity Happin, Lemon Peel Harding, Pheasant Crisp, and the brothers Something Newe and Nothing Newe.

On the distaff side Bowditch authenticated such delightful female cognomens as Miss Submit Nutting, Christmas Carroll, Always Gentle, and Prudence Grimm.

As a dedicated football fan, our favorite of the Bowditch research lot is Mr. Invisible Lightfoot. If he lived up to his name, he could have been the greatest running back of all time.

You Never Know

In connection with the foundation of a new African nation, Ghana, Dr. James B. Christensen of Wayne State university reports a phenomenon.

Dr. Christensen, an anthropologist, lived with the natives there for a year while it was a British colony. He was welcomed as an American, because our once-upon-a-time slaves were taken from that country!

"They regarded this action as a symbol of our love for them," avers the Wayne professor.

So You Think You Have Troubles Dept.

Are they getting under your skin down at the office? Sales off, profits down?

Cheer up, podner. Things could be worse.

Supposing you were Public Relations Director for the Teamsters' Union?

So True!

Planning a vacation in Florida, a neighbor didn't know what to do with his dog.

He decided to write the hotel of his choice and ask if dogs were allowed. Promptly the manager answered:

"I've been in this business for 3 years. Never have I called on police to eject a disorderly dog. Never has a dog set fire to a bed with a cigaret. I have never found a hotel towel or blanket in a dog's suitcase. Nor a whisky ring on a dresser. Of course your dog is welcome!"

Why Mothers Grow Old

Worn out from housework and a mother's million other chores, a Milwaukee woman lay down on the davenport to catch 40 winks, a contributor reveals. She felt one of the youngsters patting her face and drowsily enjoyed the child's affection.

The doorbell rang. She hurried to the door and told the salesman she didn't want any of whatever he was selling. He looked at her so queerly when she told him, however, that she glanced at a mirror on her way back to the davenport.

Her face was plastered with green trading stamps!

Cocktail Party Conversation

Recent issue of the statistical and business evaluation bulletin published monthly by the Valley National Bank of Phoenix, Ariz. (sent to us by Art Schellenberg, former president of Alco Valve) quotes Banker Roy Wenzlick:

"In building my new home I decided I could afford anything my heirs could."

"Most women in strapless evening gowns look like a chest of drawers with the top drawer open."

This same bulletin quotes Philosopher Bertram Russell:

"The big trouble with the world is that the stupid are cocksure and the intelligent full of doubt."

Simple Prose the Best

Blanketing fog of "over-precise, cliche-loaded technical jargon" which characterizes much of today's technical copy is under attack by Minneapolis-Honeywell. This firm has embarked a program for promoting good, clear (even un-precise) English. It states its platform in a recently published compact handbook for its technical writers. Forthrightly it is entitled: "Why Not Just TELL Them?"

"In this booklet we're not going to try and tell you how to write. You already know how or you wouldn't be where you are. But—everything's changing rapidly nowadays and, unless our writing technique keeps pace, a lot of printed matter is going to get tossed unread into waste baskets. This is especially true of technical writing. . . .

"Don't get the idea that this booklet is intended to bring you up to date on the latest technical jargon. Quite the opposite! It hopes to encourage you to steer clear of both technical jargon and 'engineeringese,' a pompous style of writing that's usually roundabout or timid in stating a general conclusion."

Down-to-earth tips on how to sharpen and polish technical writing are found under such headings as "overstuffed sentences," "Cliches That Clutter," and "The Headline Is the Bait."

Cornerstone for better technical writing and reporting is found in the booklet's "Ten Commandments For Technical Writing." These include:

"Thou shalt know what thou art writing about"; "Thou shalt not substitute adjectives for facts"; "Thou shalt not show off thy technical vocabulary"; "Thou shalt not leave any unanswered questions in thy reader's mind"; "Thou shalt not turn essayist when thou art a reporter." (A separate section contains expanded notes on these commandments.)

The booklet was prepared by E. A. Murphy of Minneapolis-Honeywell in collaboration with John Stahr, editorial director of Carl Byoir & Associates. Bully for Minneapolis-Honeywell!

NEW LOW PRICE

One-half the Cost of Competitive Units!

Every homeowner in your locality has a dirt and dust problem. They're all grade A prospects for you when you sell *Electro-Klean!*

Electro-Klean Electronic Home Air Filter solves the household dust problem at the source . . . catches airborne dust and pollen like a magnet attracts and holds bits of iron. *Electro-Klean* actually "house-cleans" every room in the house all day long, every day in the year . . . *actually traps up to 20 times more dirt than throw-away filters!* Yet the cost is small . . . just one-half the price of comparable units. Any home can now afford *electronic* air filtration!

Simple Installation!

No Water or Sewer Connection
No Special Wiring Circuit

You can do a big volume electronic air filter business without extra help. *Electro-Klean* is quickly installed in the air return of any forced air furnace or air conditioning system.

No after-service problems. Fully guaranteed. No plates to wash. No wires to break. No moving parts to get out of order.

Mail Coupon for details, NOW!

a product of the world's largest manufacturer of air filters
AMERICAN AIR FILTER COMPANY, INC.
109 Central Avenue, Louisville 8, Ky.

Send me details of the new promotion plan for *Electro-Klean*, descriptions, pictures and prices.

NAME_____
FIRM_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

For more information about products advertised on this page use Information Center, page 38.

law, which is generally used to derive the relationship between optical density and dust loading of the filter paper.

Glass fiber and millipore filter papers, however, have 99% to 100% efficiency ratings in stopping atmospheric dust and obey the Lambert-Beer law well, according to the studies disclosed.

When the relatively opaque glass fiber and millipore filter papers are employed for dust spot measurement, a photometer of higher stability and sensitivity "than can be conveniently obtained with the previously used simple circuits" is needed.

Photometer devised for this research includes such features as a water cell to minimize unequal heating of the two photocells employed (one for reference, the other for measurement), light source located some distance from the cells, two shutters for the reference cell, and an electronic galvanometer with a logarithmic scale.

the quality tells . . . the quality sells

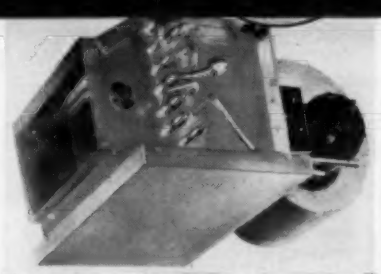
new JANITROL®

WIN-SUM-MATIC

year 'round air conditioner

COMPACT . . .

Fits in as little as 4½ square feet!
Features Multi-Thermex Gas Heating Heart and powerful air-cooled cooling.



Transom Air Conditioner by KRACK

- Ideal for hotel, motel and hospital rooms, offices, apartments, homes and other multi-room units
- Quiet centrifugal fan
- Heavy gauge aluminum housing

FREE BULLETIN TAC-1055

KRACK REFRIGERATION APPLIANCES INC

901 W. Lake St., Chicago 7, Ill.

A. O. Smith hermetic motor stators undergo surge comparison and dynamometer tests.

h

MOTORS

uilt to be . . .

LED

TEN

Just as the dependability of a modern TV picture tube is governed by the performance of a hermetically sealed electronic gun — so too, the dependability of an air conditioning compressor rests on the performance of its hermetically sealed motor.

A. O. Smith hermetic motors really can be *sealed and forgotten*. They're quality-built . . . dynamically-balanced for years of quiet, vibrationless service. Each motor is manufactured with particular attention to every detail . . . assembled and tested in controlled atmospheric conditions, ever-free of dust and foreign matter.

A. O. Smith hermetic motors are application-engineered to match your compressor design. They're available in single-phase, 1½ through 5 hp and polyphase, 1½ through 10 hp.

Write for all the facts on A. O. Smith Hermetic motors.

Choose from a complete line of A. O. Smith quality motors —

SINGLE-PHASE, capacitor-start, induction-type motors from ⅓ through 5 hp.
POLYPHASE, squirrel-cage, induction-type motors from ⅓ through 150 hp.

Through research ...a better way

A.O.Smith CORPORATION

ELECTRIC MOTOR DIVISION
Tipp City, Ohio
INTERNATIONAL DIVISION: MILWAUKEE 1, WISCONSIN

For more information about products advertised on this page use Information Center, page 38.

New JANITROL® 7-point dealer sales plan gives you the Golden Key TO PROFITS

in year 'round air conditioning!

Compact Win-Sum-Matic fits in little as 4½ sq. ft. of floor space. Uses single duct system to heat and cool, is easily linked to existing warm air ductwork. Handsome cabinet includes evaporator coil housing.

●

Air-cooled "PRIDE O' YARD" compressor-condenser is low, sleek, beautiful—safe for children and pets. Exclusive top-mounted fan boasts efficiency, throws exhaust air upward, protects nearby growing things.

Guaranteed by Good Housekeeping

1 A full line with a famous reputation for quality...and starring WIN-SUM-MATIC!

It's no longer news that today's booming market for air conditioning offers fat profit opportunities. The question is: How can you get *your* share? . . . At a profit!

Here, in one tidy "package", is your answer . . . the Janitrol Win-Sum-Matic, combining powerful waterless cooling and thrifty gas heating. Available in upflow and downflow models for easy installation in any home—loaded with features no other unit has. For example:

. . . Wrapped up in its exclusive "PRIDE O' YARD" air cooled compressor unit are new engineering advancements to insure powerful, economical cooling with outside air to 125° F. PLUS—salesmaking beauty that shames ordinary "dog house" models!

. . . A unique by-pass eliminates heat exchanger resistance on cooling cycle, gives correct air flow for heating and cooling without seasonal adjustments.

. . . Add-On cooling option expands your sales potential. Even though you install Win-Sum-Matic for heating only, *you protect your cooling profit*! When your customer decides on cooling, Add-On components are easily added.

There's more, much more, to set you up for big sales and profits. So take a minute now to check the rest of Janitrol's great new 7-point dealer profit plan. Then take action—get your GOLDEN KEY TO PROFITS with Janitrol!

2 new, low trade net prices

Advanced Janitrol engineering—new automated production methods—volume building sales leadership—all add up to more profits on every sale. This new Janitrol pricing plan lets you move in on competition with top-quality Janitrol products at *really competitive* prices!

3 new dealer stocking plan

As a Janitrol dealer qualified under this new plan, you'll keep your working capital *working*, instead of "freezing" it in inventory. You'll have the inventory you need for prompt deliveries, better service, year 'round.

4 new retail customer finance plan

Makes Janitrol cooling and heating easily available to the six out of ten families who haven't the cash but have the credit . . . on easy installment terms. No down payment. Up to three years to pay. Finance up to $3500. No risk or recourse to dealer, no collection problems. Eliminates red tape and delay. Keeps "hot" prospects from cooling off!

5 new local level promotions — to the rich modernization market

A high-impact, sales-producing merchandising program created by Janitrol for your needs, your market, your profit ambitions! Newspaper ad mats, radio and TV musical announcements, window and in-store displays, color-illuminated outdoor signs—all yours as a qualified Janitrol dealer. And Janitrol sets up the complete program to the last detail, saves your time for selling.

6 new builder promotion package

A complete merchandising program to help you snare your share of the new house market. Chock full of tested promotion ideas that give you a running start on competition—let you offer the builder a service that enables him to upgrade his houses with quality Janitrol equipment, appeal to more prospects, *stay competitive*!

7 new select dealer program

Today, Janitrol recognizes a new era in company-dealer relations. The days of "playing it by ear" are no more. There's a need for continuing close cooperation between both parties—an "open door" for exchange of ideas. The Janitrol Select Dealer Program makes these things possible, and gives you extra benefits besides. Business development counsel, training schools, prizes, vacations, to mention a few. Right now's the time to qualify!

JANITROL HEATING AND AIR CONDITIONING DIVISION
Surface Combustion Corporation, Columbus 16, Ohio

Please show me how Janitrol's 7-point program for SALES can give me the GOLDEN KEY TO PROFITS.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

4481 CVS

Fill in and MAIL TODAY!

get your Golden Key TO PROFITS with JANITROL®

Ask your JANITROL representative for the facts or RUSH THE COUPON TO US! NO OBLIGATION!

Complete line of gas and oil furnaces, unit heaters, conversion burners, water cooled and air cooled summer conditioners, combination heating-cooling conditioners.

8-Month Average Operating Cost for 3-Ton Heat Pump

Meter Reading Dates	Total kwhr. Used	Total kw. Demand	Total Cost $	Cost per kwhr.	—Weathertron— kwhr. Used	Operating Costs per Month
4/12 to 5/12/56	1,520	9.2	31.13	.0205	320	$ 6.56
5/12 to 6/14/56	1,200	8.4	24.73	.0206	360	7.42
6/14 to 7/12/56	1,400	11.2	28.73	.0205	1,100	22.55
7/12 to 8/14/56	2,360	10.0	47.93	.0203	1,040	21.11
8/14 to 9/15/56	1,880	11.2	38.33	.0204	910	18.56
9/15 to 10/15/56	1,520	8.0	31.13	.0205	360	7.38
10/15 to 11/14/56	1,480	9.6	30.33	.0205	210	4.31
11/14 to 12/14/56	2,440	13.6	45.75	.0188	780	14.66
Total Electrical Cost			$278.06			
Weathertron Operation Cost						$102.55

Kansas Utility Gathers Heat Pump Operating Cost Data as Sales Aid

SALINA, Kan.—Heat pump prospects in this area who question the operating cost can now get some authentic data from Kansas Power and Light Co. here.

It cost Enoch Harris a total of $102.55 to operate his 3-ton General Electric Weathertron heat pump from April 12, 1956 through Dec. 14, 1956, or an eight-month average of $13 per month or 43 cents a day, a study of the separate electric meter installed for the unit reveals. Power rate is 2 cents per kwhr.

General Air Conditioning and Electric Co., G-E dealer here, installed the Model WT-44-C2 unit in the Harris residence, which has 1,250 sq. ft. of living area, according to E. F. Cassing, field engineer of General Heating and Cooling Co., G-E distributor.

The house is of combination brick veneer and frame construction on a concrete slab which is insulated around the perimeter. There's 4 in. of insulation in the walls, 6 in. in the ceiling. Windows are fixed. Duct system is of the perimeter network type and all returns are high wall.

As shown in the accompanying table, lowest month for heat pump operating costs in the period was Oct. 15 to Nov. 14 with $4.31. Highest was June 14 to July 12 with $22.55.

Harris, incidentally, has an all-electric home. In addition to the heat pump, he has an electric range, water heater, dryer, automatic washer, water pump (for his own well), and numerous other appliances. No city gas or water lines run to the house.

More Accurate Method To Check Filter Efficiency Claimed

CHICAGO—Results of more research on the controversial problem of evaluating air filters by the dust spot method were disclosed in a paper presented before the American Society of Heating and Air-Conditioning Engineers at its 63rd annual meeting here.

Glass fiber paper and millipore filters have been "found superior to the chemical papers ordinarily used" with the dust spot method, according to K. T. Whitby, A. B. Algren, and R. C. Jordan, all of the Mechanical Engineering Dept., University of Minnesota, where the studies were conducted under the sponsorship of ASHAE. Whitby presented the paper at the society's meeting.

They also developed what is claimed to be an "improved null type photometer having greater sensitivity, accuracy, convenience, and flexibility" for dust spot measurements.

Essentially, the dust spot method checks efficiency of air cleaners or filters by comparing photometrically the dust collected on filter papers placed in the air stream in front of and beyond the air cleaner.

"Because of their relatively high light transmission, strength, and availability, chemical filter papers have been most frequently used as dust spot sampling media," Whitby said.

Such filter papers, however, have "certain known deficiencies" such as low efficiency on atmospheric dust and poorer obedience of the Lambert-Beer law, which is generally used to derive the relationship between optical density and dust loading of the filter paper.

Glass fiber and millipore filter papers, however, have 99% to 100% efficiency ratings in stopping atmospheric dust and obey the Lambert-Beer law well, according to the studies disclosed.

When the relatively opaque glass fiber and millipore filter papers are employed for dust spot measurement, a photometer of higher stability and sensitivity "than can be conveniently obtained with the previously used simple circuits" is needed.

Photometer devised for this research includes such features as a water cell to minimize unequal heating of the two photocells employed (one for reference, the other for measurement), light source located some distance from the cells, two shutters for the reference cell, and an electronic galvanometer with a logarithmic scale.

Quiet remote type

KRACK 25th ANNIVERSARY MODEL

Transom Air Conditioner by KRACK

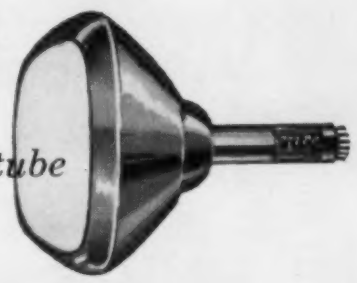
- Ideal for hotel, motel and hospital rooms, offices, apartments, homes and other multi-room units
- Quiet centrifugal fan
- Heavy gauge aluminum housing

FREE BULLETIN TAC-1055

KRACK REFRIGERATION APPLIANCES INC

901 W. Lake St., Chicago 7, Ill.

like the electronic gun in a TV picture tube



A.O.Smith HERMETIC MOTORS are quality-built to be . . . . . SEALED AND FORGOTTEN

A. O. Smith hermetic motor stators undergo surge comparison and dynamometer tests.

Just as the dependability of a modern TV picture tube is governed by the performance of a hermetically sealed electronic gun — so too, the dependability of an air conditioning compressor rests on the performance of its hermetically sealed motor.

A. O. Smith hermetic motors really can be *sealed and forgotten*. They're quality-built . . . dynamically-balanced for years of quiet, vibrationless service. Each motor is manufactured with particular attention to every detail . . . assembled and tested in controlled atmospheric conditions, ever-free of dust and foreign matter.

A. O. Smith hermetic motors are application-engineered to match your compressor design. They're available in single-phase, 1½ through 5 hp and polyphase, 1½ through 10 hp.

Write for all the facts on A. O. Smith Hermetic motors.

Choose from a complete line of A. O. Smith quality motors —

SINGLE-PHASE, capacitor-start, induction-type motors from ⅓ through 5 hp.
POLYPHASE, squirrel-cage, induction-type motors from ⅓ through 150 hp.

Through research ...a better way

A.O.Smith CORPORATION

ELECTRIC MOTOR DIVISION
Tipp City, Ohio
INTERNATIONAL DIVISION: MILWAUKEE 1, WISCONSIN

How Distributor Can Plan Ahead To Keep Profit When Volume Grows or Falters

By J. W. Krall, President,
McCray Refrigerator Co., Kendallville, Ind.

"If I were a commercial refrigeration distributor, I would. . . ."

Four executives of refrigeration equipment manufacturers were given an opportunity to sound off on this theme at the 10th annual convention of the National Commercial Refrigerator Sales Association.

They put forward their pet ideas on store planning and engineering services, sales pricing standards, service department organization, and the approach to voluntary chains and supermarket operations.

Below, J. W. Krall, president of McCray Refrigerator Co., Inc., tells how he would establish pricing standards if he were a distributor. In coming issues J. A. Brinkoeter, first vice president of Friedrich Refrigerators, Inc., will discuss service department organization and Ray L. Greene, sales manager of Tyler Refrigeration Corp., will discuss an approach to chains.

Victor Steg, regional accounts manager for C. V. Hill & Co., Inc., discussed store engineering in the March 25 issue.

If I were a commercial refrigeration distributor, I would have pricing standards that would never be below my operational costs and would always be high enough to include an acceptable profit.

In addition, I would have sufficient predetermined facts and figures that would give be a complete and full realization of the steps necessary to still realize a profit, in the event circumstances were such that a change in my pricing standards were essential for my survival.

This degree of flexibility is not possible without a thorough knowledge of all the facts which would take it beyond the realm of guesswork and wishful thinking.

If I were a distributor, I would not have sales pricing standards until I thoroughly explored the following:

1. A complete analysis of my business and what effect each segment of the operational overhead had to each other, and to the total sales dollar.

2. With this knowledge I would then prepare several budgetary statements, each under a different set of conditions.

3. I would have factual information on my competitors' quotations.

Last August you received from your association a statement of expenses, which are overhead figures as reported by 29 members.

In my opinion, this statistical information is one of the most important documents I have ever seen and, if properly analyzed, more than repaid you for your membership dues.

Undoubtedly, when you received it, each and every one of you noticed what the average figures were and probably compared your own figures with the average submitted.

In addition, you also probably picked an operation within your own volume and made a like comparison, but I seriously question if anything more was done with them.

Actually, this statistical information placed in your hands the end result of a complete budgetary control setup. Without it, neither manufacturer nor distributor can or could operate efficiently.

In our own organization, before we arrive at these end results many people put in many weeks of very hard effort. Let me show you, in the hopes that you will be impressed with what you have at your fingertips:

First, is the forecast of manufacturing expense. Next, a forecast of home office commercial expense, (which includes such items as advertising; fixed expense; semi-variable expense; sales department expense; general office expense; etc.) and then last, these two are combined and present a forecast of operations for the year 1957, which is exactly what is represented by the overhead expense figures that you received from your association.

'Mark-Up' Meaningless

As I analyze your association's overhead expense figures, I am immediately impressed by the fact that the term "mark-up," as expressed in percentages, is meaningless unless and until the other facets of a distributor's business are directly correlated in like proportion.

Nevertheless, the term "mark-up" is kicked around more than any phrase, in our industry or any other. Let me explain.

The NCRSA Overhead Report shows that Company 2 and Company 29 are in the same volume bracket — $750,000 or over.

Company 2 has a gross margin on all sales of 15.30%, or a mark-up of 18%. On the other hand, Company 29 shows a gross margin on all sales of of 38.80%, or a mark-up of 63.40%.

Despite this wide variation in mark-up or gross margin on all

(Continued on next page)

Mr. Serviceman:
DOES YOUR PRESENT CAULKING COMPOUND GIVE YOU ALL THREE?

1. LOWER PRICE
2. EASIER APPLICATION
3. TOP PRODUCT QUALITY

If Not . . . You Owe It To Yourself To Start Using

Mortite CAULKING CORD or CAULKING GUM NOW!

Here's Why...

Mortite Caulking Cord or *Mortite Caulking Gum* will perform your many caulking and sealing jobs faster, better than any other compound—and at much lower cost! Made specifically for and *designed by* refrigeration servicemen, these two MORTELL products come packaged in handy cylindrical containers to fit any tool box. Compact size eliminates waste.

These Facts Tell the Difference!

MORTITE CAULKING CORD—3/16" rope-like strands stay permanently soft. Non-staining, Mortite White in color, ready for immediate painting. Three compact, 8-strand 16-ft. rolls unwind one or more strands at a time without unwinding entire roll.

MORTITE CAULKING GUM—Easily hand-moulded into beads, wads, gaskets or any desired shape. One pound slug (2½" x 6") never hardens or cracks—adheres to any clean, dry surface through normal temperature ranges.

Mortite Caulking Cord or Mortite Caulking Gum will do the job better than your present caulking compound at a fraction of your present cost. Write today for complete information about these two products and the complete line of Mortell refrigeration products.

MAIL COUPON FOR FULL INFORMATION

JW Mortell COMPANY
Makers of Famous NoDrip Tape and Mortite

J. W. MORTELL CO.
520 Burch St., Dept. 4, Kankakee, Ill.
O.K! Send me full information about the complete line of Mortell refrigeration products.

I'm a _____ Jobber _____ Dealer
_____ Serviceman

Name _____
Address _____
City _____ State _____

NOLIN *Moisturizer*
VEGETABLE CASE

AVAILABLE IN
5' - 8' - 10' SIZES

If It's Not a NOLIN, It's Not a MOISTURIZER

NOLIN MANUFACTURING COMPANY
1400 LLOYD ST. PH. 2-4454
MONTGOMERY, ALABAMA

For more information about products advertised on this page use Information Center, page 38.

Should Budget Sales Four Ways--

(Continued from preceding page)

sales, Company 2 with a mark-up of only 18% indicates a net profit before taxes of 6.10%. Company 29 with a gross margin of 38.80% and mark-up of 63.40% only shows a net profit before taxes of 2.78%.

Net Profit Comes From Controlled Overhead

If you will refer to your chart, you will quickly learn that the difference in net profit is directly traceable to overhead factors that are very carefully controlled in one instance and apparently disregarded in the other.

It is for this reason that I say, mark-up by itself is meaningless, for it does not necessarily represent the amount of profit that a distributor will make at the end of the year.

Recent information received from the association informs us that the majority of members will do between $100,000 to $400,000 in sales volume. Let's take an average of $250,000 as a starting point and assume that is the volume I expect to do in 1957.

I would then budget this figure and add three other budgets on a varying volume with different mark-ups and expenses, and compare the net profit before taxes results. This would be shown in Chart I.

With net sales at $250,000 or 100%, cost of sales at $175,000 or 70%, I would have a gross profit of $75,000 or 30%, which represents a 42.857% mark-up. A total expense of $68,000 or 27.20% gives me a profit before taxes of $7,000 equal to 2.80%.

If this business increased to $325,000 in sales, with the same mark-up of 42.857% and the same percentage on gross profit and total expense, my 2.80% profit would become $9,100 instead of the $7,000 figure with $250,000 in sales, an increase of $2,100 or 30%.

The next set of figures would indicate that with $325,000 net sales, but a mark-up of only 30% instead of 42.857%, my gross profit would become $75,000—23.08%, instead of 30%.

If I kept my overhead exactly as it was if I were doing $250,000 in sales, my net result would be 2.16% or $7,000 as I had under the first example.

Last but not least, and probably of considerable importance to me would be—What will happen to my operation if I'm sure of $250,000 in volume and a regular gross profit of 30%, and then decide to take on a supermarket in the amount of $100,000 with only a 10% mark-up instead of my standard 42.857%?

Here's the answer: total sales —$350,000; gross profit on sales —$84,090 or 24.03%; my expense being the same as it was under the $250,000 category, I would end up with a net profit of 4.60% or $16,090.

The four sets of figures just described are all on the plus side of the sales volume figure, but in order to be factual we should also see what happens if the projected net sales of $250,000 falls short and becomes $200,000, and the other facets of the business are allowed to continue as projected on the original amount of $250,000. (Chart II).

The net result would then be as follows: Gross margin would be $60,000 or 30%. Your total expense remains at $68,000 or 34%, which would then indicate a loss of $8,000 or minus 4%.

It, therefore, must become quickly obvious that if the volume drops it is extremely important that the budget figures be immediately reviewed and the overhead expense rates reduced proportionately to attain the same profit of 2.80% that you were shooting for with the $250,000 volume. The total expense must be reduced to $54,400—27.2%, which would then make your profit $5,600—2.80%.

In this example lies the inherent danger of every budgetary control system. In every instance this is projected on a set given dollar volume. When we see this figure dropping, we must move and move quickly to re-align our operations and this

(Concluded on next page)

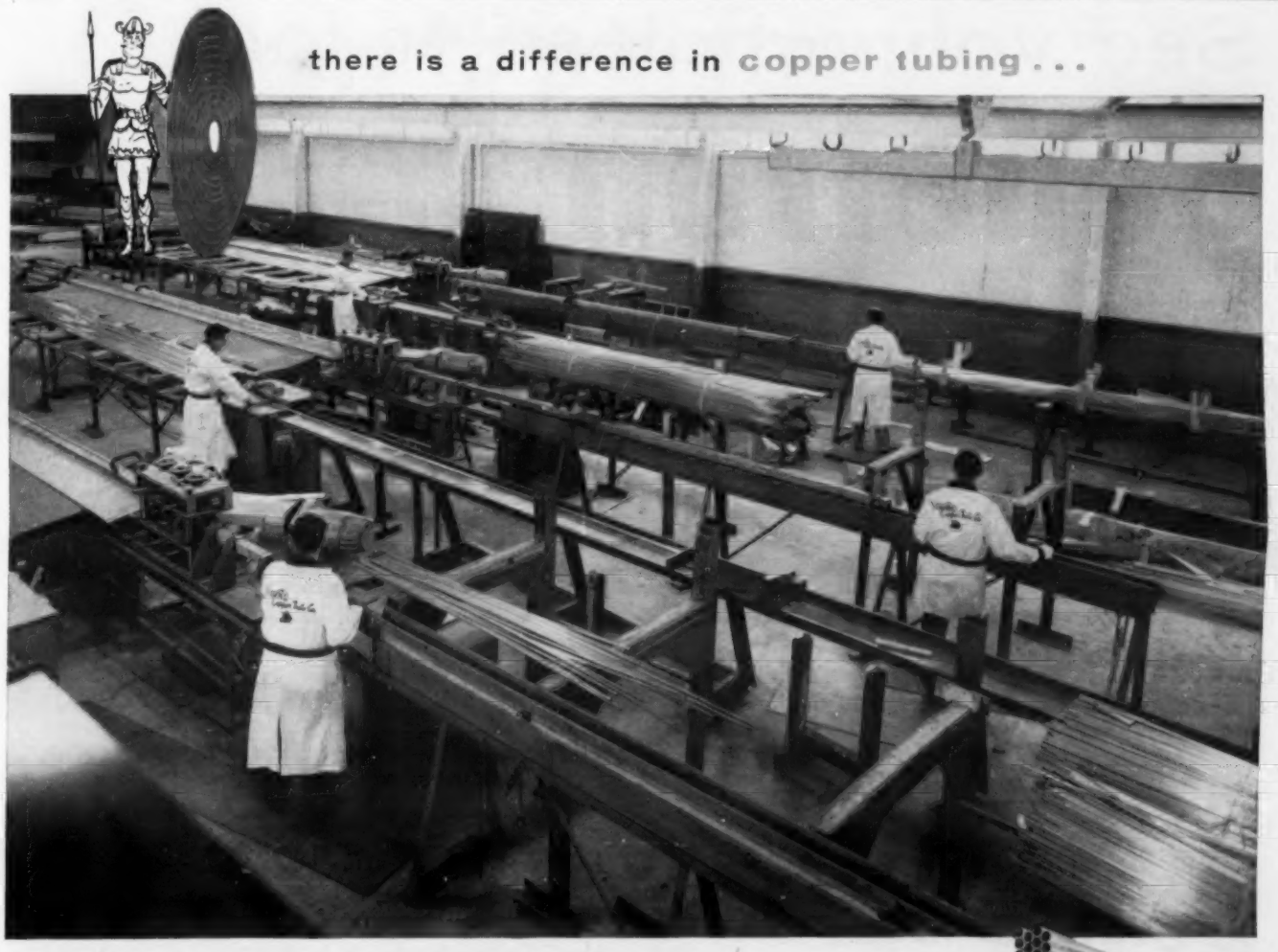
CHART I

	(42.857% Mark-up) Amount	%	(42.857% Mark-up) Amount	%	(30% Mark-up) Amount	%	(250,000 W/ 42.857% Mark-up) (100,000 W/ 10% Mark-up) Amount	%
Net Sales	$250,000	100.00	$325,000	100.00	$325,000	100.00	$350,000	100.00
Cost of Sales	175,000	70.00	227,500	70.00	250,000	76.92	265,910	75.97
Gross Profit On Sales	$ 75,000	30.00	$ 97,500	30.00	$ 75,000	23.08	$ 84,090	24.03
Total Expense	68,000	27.20	88,400	27.20	68,000	20.92	68,000	19.43
Net Profit	$ 7,000	2.80	$ 9,100	2.80	$ 7,000	2.16	$ 16,090	4.60

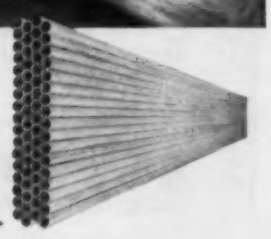
CHART II

	(42.857% Mark-up) Amount	%	(42.857% Mark-up) Amount	%
Net Sales	$200,000	100.00	$200,000	100.00
Cost of Sales	140,000	70.00	140,000	70.00
Gross Profit On Sales	$ 60,000	30.00	$ 60,000	30.00
Total Expense	68,000	34.00	54,400	27.20
Net Profit	$ - 8,000	- 4.00	$ 5,600	2.80

there is a difference in copper tubing . . .



the difference in VIKING is
when we say "straight"...we mean...
STRAIGHT – STRAIGHT AS AN ARROW!



A battery of electrically controlled Mackintosh-Hemphill rotary tube straightening machines keep VIKING copper tubing absolutely, unvaryingly straight. In addition, these machines precisely temper the tubing imparting to it correct surface hardness . . . thus developing the proper strength and ductility vital in tubing used for air conditioning and refrigeration purposes. This uniform temper assures trouble-free fabrication resulting in substantial savings in time and labor.

This important "difference" in VIKING copper tubing has made VIKING the preferred thin-wall tubing for an ever-growing list of America's leading manufacturers of air conditioning and refrigeration units and coils.

VIKING copper tubing continues to be the result of the combined efforts of skilled craftsmen seeking always to create a tubing that will do the job better, faster and at lowest cost!

VIKING COPPER TUBE CO.
CLEVELAND 10, OHIO

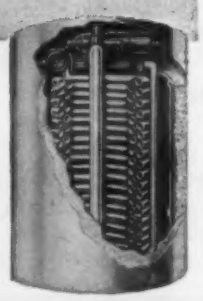
PRECISION DRAWN SEAMLESS COPPER TUBING

BENDING TEMPER
The proper kind of strength and ductility is vital in tubing used for refrigeration and air conditioning purposes. VIKING copper tubing possesses these properties to a far greater degree than other types of tubing. Its temper assures flawless fabrication.

EXTRA FLEXIBILITY
Viking Copper Tube is soft and pliable, yet exceedingly rugged. It saves time and labor because it can be coiled, formed, flared and expanded quickly without danger of fracturing or splitting.

ELECTRONIC QUALITY CONTROL
An electronic "Brain" detects the minutest flaw or imperfection in the walls of VIKING tubing . . . automatically discarding defective tubing. Trouble-free fabrication is virtually guaranteed — operational failures almost completely eliminated.

Filtrine Since 1901



Tank Type WATER COOLERS

- Extra-large storage
- Safety from freeze-up
- Fast hourly recovery
- 20-year life construction

Capacities: 5 to 500 g.p.h.
Storage: 2 to 240 gals.

Water coolers for all uses factory-packaged with your condensing unit. Write for literature.

FILTRINE MFG. COMPANY
216 W. PROSPECT ST. • WALDWICK, N. J.

Distributor Profits--

(Concluded from preceding page)

must be done. Unless this is done, red figures will always be the ultimate result.

Now let's take a look at our competitors. Regardless of how hard we might wish that we had the power to set our own selling prices, we must in all truthfulness admit that these are determined by the competitive situations that exist in our respective territories.

'Quality for Quality'

None of us likes to admit this; nevertheless, it remains a fundamental fact. Quality for quality—if I have a competitor consistently quoting on a 20% mark-up, I cannot remain in business if I insist upon a 30% mark-up. Again, all things being equal.

The second biggest pitfall in our industry is the statement: "My company is quoting such low prices he simply cannot remain in business."

Since 1946 I have heard this said about a distributor that I have in mind. I know he is still in business and is doing a big volume.

This is also probably what Company 29, with a mark-up of 63.40%, that I mentioned earlier, is saying about Company 2, with a mark-up of 18%, and yet when you compare a net profit of 2.78% against 6.10%, I wonder which of the two is going to remain in business the longest.

It must be obvious, therefore, that every distributor must align his operational overhead department so that he, too, would be in a position to quote the same mark-up as his competitor and still realize a profit. This is one of the fundamental bases of all businesses and no one is exempt from the rule of survival.

Don't Always Need 100% Mark-Up

Believe it or not, there are still among you, distributors that are selling at full list prices, regardless of diminishing volume. They're doing so under the false assumption that they must have a 100% mark-up to make a profit and they refuse to take into consideration competitive situations that are directly responsible for their loss in volume.

Their continuing excuse is that they will not do more volume for the same amount of dollar net profit—the history of American industry.

Many manufacturers in this industry in 1936 realized at least a 25% gross profit before taxes, and there were no taxes to speak of. Many of these same manufacturers are now realizing from 5% to 10% gross profit before taxes, and in order to realize the same dollar before taxes figure, it was necessary to more than triple the total sales volume.

Obviously, if a few of these same manufacturers had insisted upon a retention of 25% gross profit figure before taxes, competitors with contrary thinking would have forced them out of business.

Let past practices belong to the historians and the future to the economists, but the present is ours.

Sweden Freezer Ups Palm

SEATTLE—Emmett E. Palm, assistant domestic sales manager of Sweden Freezer Mfg. Co., has been named domestic sales manager, Harvey F. Swenson, president, announced.

Palm moves into the place left vacant by M. H. Patneaude, who is vice president-sales.

Nor-Lake Ups Facilities To over 63,000 Sq. Ft.

HUDSON, Wis.—The second major expansion of plant facilities within a year was announced by Harry J. Blakeman, president of Nor-Lake, Inc., commercial and domestic refrigeration equipment manufacturer here.

Latest phase of the Nor-Lake expansion program has been the leasing of warehouse facilities, totaling 18,000 sq. ft., located on rail trackage near the firm's main plant. Included in the warehouse development was special materials handling equipment.

The additional space brings Nor-Lake's total office and production facilities in Hudson to more than 63,000 sq. ft. It follows the recent completion of a 15,000-sq. ft. building used exclusively for the fabrication and assembly of all-metal walk-in type coolers. This building, too, includes it own truck and rail facilities.

The firm manufactures refrigeration equipment in nearly 100 different types and models, ranging from conventional refrigerators and freezers to equipment for specialized commercial and industrial needs.

Canadian Frozen Food Firm To Up Capacity

HAMILTON, Ont., Can. — Within a year of the completion of its frozen food warehouse on the Queen Elizabeth Way at Van Wagner's Beach, Langs Foods, Ltd. has awarded contracts for an expansion that will more than double its capacity.

J. R. Langs, manager, said expansion is imperative to meet the frozen food distribution requirements in the growing residential-industrial belt extending westward to London and east to Toronto and Montreal.

This is the firm's fourth expansion since the Bay Street storage plant was opened in 1940.

W. H. Cooper Construction Co. has been awarded the general contract and the Canadian Ice Machine Co., Ltd. Toronto, will supply the equipment.

The new building will add 700,000 cu. ft. of storage space, making a total of 1,300,000 cu. ft.

There will be an Arctic atmosphere at the plant. Fruit, meat, and poultry, including tons of Christmas turkeys, are fast frozen at temperatures that at times are 60 to 70° below zero.

R. D. Thrush Dies at 54

CHARLESTON, W. Va.—Roland D. Thrush, 54, owner of Thrush Refrigeration Co., died recently in Mountain State hospital after a short illness. He formed the firm in 1932.

See your wholesaler for

genetron® super-dry **REFRIGERANTS**

a complete line for your every need!

genetron 11—ORANGE LABEL TRICHLOROMONOFLUOROMETHANE	For industrial and commercial refrigeration and air conditioning systems using single or multi-stage centrifugal compressors. Can also be used for either direct or indirect expansion-type systems.
genetron 12—WHITE LABEL DICHLORODIFLUOROMETHANE **genetron 22**—GREEN LABEL MONOCHLORODIFLUOROMETHANE	Used in virtually all types of refrigeration and air conditioning equipment, large and small, household and industrial, direct and indirect expansion systems. Typical units in which "Genetron" 12 and 22 are used: refrigerators, freezers, frozen food lockers, window air conditioners, home or office console units, large custom-built units for commercial comfort or industrial processes, large store units, mobile units for transportation equipment, large home units for addition to present hot air heating systems.
genetron 113—PURPLE LABEL TRICHLOROTRIFLUOROETHANE	Used in 50-ton and larger centrifugal compressors, primarily for large comfort cooling systems, brine cooling systems, and other commercial and industrial air conditioning and refrigeration systems.
genetron 114$_A$—BLUE LABEL DICHLOROTETRAFLUOROETHANE	Used in centrifugal and rotary compressors for commercial, industrial and household refrigeration.

QUICK FACTS on genetron super-dry refrigerants

- Guaranteed exceptionally low moisture content
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- Solvent action on oil helps prevent solidification or congealing of lubricant
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- Aid in lubrication of equipment; generally miscible with oil
- Available everywhere, from refrigeration wholesalers throughout the country

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Safely supports hanging pipes, conduits and cables up to 500 lbs. ¾ in. 20 gauge electro-galvanized steel. ¼ in. holes on ½ in. centers. Various lengths available. *Send for literature.*

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For more information about products advertised on this page use Information Center, page 38.

Environmental Engineers Technical Meeting To Combine With Equipment Conference In Chicago April 25-26

CHICAGO—The first annual technical meeting of the Institute of Environmental Engineers and an equipment conference of the Environmental Equipment Institute will be held April 25 and 26 in the LaSalle hotel here, it was announced.

According to Dr. George D. Wilkinson, general manager of both institutes, over 3,000 preliminary announcements of the meeting have been mailed to selected individuals throughout the United States and Canada. A number have been sent to technical societies in Europe, Japan, Australia, and other parts of the world.

Meeting Open to Interested Persons

The meeting is open to every one interested in environmental testing, science, and simulation. Authoritative speakers and an opportunity for discussion with experts in this field "combine to provide a distinguished conference program," the announcement said.

Conferees have a choice of sessions for each day of the conference. Also, there will be facility trips each morning to the Basic Nuclear Research Laboratory at the University of Chicago.

To Hold Equipment Meetings Both Days

Equipment conferences will be held both days, and an open house, sponsored by the Environmental Equipment Institute is set for Thursday evening from 8 to 10:30. Participants in the equipment conference include:

Manufacturing members—Alpha Electric Refrigeration Co., Detroit; American Research Corp., Farmington, Conn.; Bemco, Inc., North Hollywood, Calif.; Bowser Technical Refrigeration, Terryville, Conn.; Cincinnati Sub-Zero Products, Cincinnati; Harris Refrigeration, Cambridge, Mass.; Hudson Bay Co., Chicago; International Radiant Corp., Port Washington, N. Y.; Murphy & Miller, Inc., Chicago; Standard Cabinet Co., Carlstadt, N. J.; Tenney Engineering, Inc., Union, N. J.

Associate members — Dean Products, Inc., Brooklyn; Bristol Co., Waterbury, Conn.; Minneapolis-Honeywell Regulator Co., Minneapolis.

Session "A" of the technical meeting Thursday morning, April 25, will include a talk on "Air Force Explosion Testing Techniques," by G. W. Gerhardt, Wright Air Development Center, and "Qualification Testing of High Temperature Aircraft Hydraulic Pumps," by A. B. Billett, of Vickers, Inc.

Session "B" will be on "Sinusoidal, Random, and Sinusoidal Plus Random Excitation" by F. George of General Electric Co., and "Environmental Testing with Random Noise Vibration" by D. G. Douglas, Rocketdyne Div. of North American Aviation.

After luncheon, Brig. Gen. J. V. Edmundson, deputy director of operations, Strategic Air Command, will speak on the "Mission and Meaning of SAC."

Session "C" Thursday afternoon, will consist of a talk by P. H. Brandt of Murphy & Miller, Inc., on "High Altitude Missile Guidance Equipment tested on the Ground," and one by Dr. Neal A. Cook, Westinghouse Air Arm Div., on "Ram Air Simulation During Temperature Altitude Tests."

At Session "D" Thursday afternoon W. R. Elliot of Boeing Aircraft Corp. will speak on "High Temperature Vibration Measurements." A talk on "Predicting and Evaluating Low Frequency Vibration Environments of Aircraft" will be given by E. J. Kirchman, Glenn L. Martin Co., and the subject of "What to Do When Its Too Big to Test" will be covered by R. M. Mains, Knolls Atomic Power Laboratory.

The schedule for Friday, April 26, also calls for two morning sessions. Session "E" includes a talk on "Problems of Humidity Instrumentation" by J. Boyle, Boyle Engineering Laboratories, and another on "Design Consideration for Advance Performance Temperature, Humidity, and Altitude Parameters in a Test Facility" by B. Friedman, Tenney Engineering, Inc.

Programmed for Session "F" is a paper on "Methods for Estimating Acoustic Environment for the B-58 Weapons System" by E. H. Stepp, Convair, and a talk by H. H. Hubbard, National Advisory Committee for Aeronautics, on "Some Results of Structural Tests Under High Intensity Noise."

Also, Dr. J. Baruch and I. Dyer, of Bolt, Baranek & Newman, Inc., will talk on "Problems in Acoustically Induced Equipment Failure."

Session "G" Friday afternoon, will include "Effects of a Heterogeneous Group of Fungi on Military Equipment and Material" by Dr. E. J. Keegan, St. Johns university and the Burgoyne X-Ray and Metal Testing Laboratories, and "A Critical Analysis of the Salt Spray Test" by Carl Durbin, Chrysler Engineering Div., and Walter Cavanaugh, Parker Rust-Proof Co.

At Session "H" the same afternoon there will be a talk by W. W. Hill, Westinghouse Air Arm Div., on "Radio Frequency Environment," and J. F. Harrison of Sprague Electric Co. will talk on "Audio and Radio Frequency Environmental Requirements.

Registration for members is $17.50 for both days, or $12.50 for each day.

McLaughlin To Head Copeland Manufacturing

SIDNEY, Ohio—Merle W. McLaughlin has been appointed vice president in charge of manufacturing of the Copeland Refrigeration Corp., Frank J. Gleason, president, announced.

McLaughlin

Prior to joining Copeland, and since 1953, McLaughlin was general manager of the Traverse City, Mich. division of the F. L. Jacobs Co., manufacturing automotive parts, ordnance instruments, and commercial refrigeration cabinets.

He attended the University of Toledo and in 1943 was graduated from Marquette university as a mechanical engineer, it was explained.

2 ways to win friends and influence customers...

1 Study Public Speaking

2 Sell Marley Aquatowers

The contractor who is in business to *stay* knows that consistent and lasting performance in an air conditioning installation speaks louder than words. That's why a majority of successful contractors simply standardize on Marley Aquatowers.

Only in Aquatowers do you and your customers get the benefit of 35 years of cooling tower engineering and production know-how —*plus* heavy steel casing . . . super-tough protective plastic finish . . . more-than-adequate filling . . . plus-performance diffusion deck . . . long-life mechanical equipment that was designed and manufactured just for the tower. Only in Marley Aquatowers do you and your customers receive a guarantee of performance and service that is backed by the world's leading producer of packaged cooling towers for all air conditioning and refrigeration services.

The impression that you make on customers with Aquatowers is a lasting one, for they are the packaged cooling towers with the future (your future) in mind. For information and prompt delivery see your Marley supplier in any of 300 cities . . . soon!

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They'll Do It Every Time

by Jimmy Hatlo

BEFORE I SHIP THIS ORDER TO NATIONAL GILT-EDGE, I THOUGHT I'D BETTER CHECK ON 'EM AGAIN WITH YOU, P.J.····
I'VE TOLD YOU A DOZEN TIMES·· THEY'RE OUR BEST CUSTOMER·· TRIPLE A, NO.1···GIVE 'EM ANY-THING THEY WANT UP TO A MILLION BUCKS···
CREDIT MGR.
QUINSY, THE HOTSHOT SALES-MAN, DRIVES CUBEB, THE CREDIT WATCH-DOG, NUTZ CHECKING AND RECHECKING THE RICHEST CLIENT IN THE COUNTRY····
SO NEXT DAY HE OKAYS A SHIPMENT FOR ANOTHER OUT-FIT WITHOUT TELLING ANY-BODY····
THANX AND A TIP OF THE HATLO HAT TO PEG MERKLINGER, PHILADELPHIA, PA.
HUH ?
HEY, YOU !! YOU PUT THROUGH A CHARGE FOR FLYBY & NITE WITHOUT CONSULTING ME! WELL, GET A LOOK AT THE LAST THREE RUBBER DOILIES THEY PAID US····
JERSEY BOUNCE
JIMMY HATLO
2-27
CREDIT MGR.
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A Plan for Levelling Out Sales

(Continued from Page 1)

come May, June, July, and August and all of us in air conditioning are so busy we can't possibly handle the business. There are not enough mechanics to install, nor enough salesmen to sell, nor enough inventories to supply this peak demand. The industry loses many sales and our *annual volume suffers*. We disappoint the public both on installation and service, and make enemies instead of friends.

Down in Miami the hotels whipped this peak season problem by offering rooms as low as half price out of season, and they are jammed even in June because of it. *Their annual volume is greater than ever.*

Let the air conditioning industry build into its products a price structure that will provide *much lower* prices in November, December, January, February, and March, and I think you'll see plenty of action. The Johnny-come-latelies who wait until June to buy would have to pay more for their procrastination, and the early bird would save an appreciable amount of money.

What is being said here refers primarily to self-contained packaged air conditioners for commercial and industrial application in existing buildings. I see no reason why a somewhat similar pricing structure would not be just as useful for residential air conditioning and window-type room air conditioners. For that matter, replacement sales of forced warm air furnaces might well be levelled out similarly. The time for installing air conditioning in new construction is, of course, tied in with the completion date, and therefore separate and apart from this discussion.

The peaks and valleys in this industry present the most acute problems, and spawn the most absurd business practices that ever plagued a businessman. We have been accepting as a peak period the months of April, May, June, and July and we have usually considered these four months as representing about 75% of our annual sales, with the remaining eight months representing 25%. Such figures are inaccurate in terms of *actual air conditioning installations* north of the Mason-Dixon line, the most populous section of the country.

A more realistic appraisal of the air conditioning industry considering installations only (which I believe is all that counts) would give 85% to the peak six months and 15% to the remainder. How to correct this dismal situation is the purpose of this suggested program. In my opinion several of the industry leaders will have to adopt it to make it effective. It is not a one-company job.

In case there is question of the validity of this plan under our anti-trust laws, there need be no uniformity on the part of manufacturers in the details of establishing such a pricing structure, nor is there anything remotely suggesting the elimination of competition.

The mechanics of such a pricing structure need not be too complicated. Manufacturers of air conditioning equipment, components, and parts should simply establish their net selling prices for a full year so that their annual sales dollar volume would be no less than in the past, but designed so that rewards for off-season installations at retail would be substantial.

For example, a 5-ton self-contained package unit, if regularly priced at 10% higher price than presently sold by the manufacturer to his distributors or branch distributing houses, would permit a 15% to 20% reduction of the installed price in November, December, January, February, and March.

As a matter of fact the industry offers little if any incentive at present for off-season installations to the retail customer—except a lot of talk about "buying early to be sure of having it" or "you can get a better job done now." And if a small price allowance is given it usually carries with it a good part of the dealer's profit and a pint of his blood. None of this gobbledegook has proven effective in making actual installations in off-season months during recent years of ample supply.

To make this plan effective great care must be exercised to avoid the impression that the industry *raises* its prices in May, June, July, and August. Rather, the opposite should be true. Actually it *reduces* its prices during the off-season months. None of us looks upon the Florida hotel man as raising his rates during February. Instead we think of him as offering a big reduction in June.

"Installations completed" is all that counts! For that reason this plan must be set up by the manufacturer and controlled by him. He must offer his reduced price only in the form of a credit for an actual certified installation which has been checked, tested, and started by the installing dealer, and accepted by the customer. Thorough certification and even an affidavit would not be unreasonable.

Such off-season installation certificates need only follow the customer distribution chain, being forwarded to the wholesaler or factory branch by the dealer to whom credit is issued and in turn forwarded by the manufacturer who issues credit to him. The manufacturer would charge such credit to a reserve account created for this purpose from his increased net selling prices.

Furthermore, the industry could well justify such a program because contractor-dealer activities would be levelled out to such an extent that the public would have less difficulty in obtaining service during the hot months. And we all know how acute the service problem becomes when hot weather arrives (all of us are too busy with sales and installations). This black-eye to our industry could well be converted to an asset, and the service business become a big source of added revenue to all concerned.

Merchandising aspects of this plan present unlimited possibilities. We now, as an industry, concentrate our advertising in the hot months, whereas we could do a big productive advertising job during the first quarter by stressing "Save $300 by Doing It Now." Such advertising

(Concluded on next page)

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—*Charles A. Dana.*

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What's Your Opinion of PLOSAC?

Mr. Alter and the NEWS invite comments from readers in all phases of the air conditioning industry in order to develop additional ideas for PLOSAC, as well as to help iron out possible kinks in the proposal. If you prefer to "sound off" in a private way, just say so in your letter and your confidence will be respected.

It is suggested that formal and informal groups might like to discuss PLOSAC and offer your collective comments both Pro and Con.

Address will be found in the masthead just across the page.

Exhibit "X" Based on Actual Installations made

Using as an example 1,000 5-ton self-contained PACKAGE Units with a $75 net price advanced by the manufacturer. Monthly percentage figures as estimated for 1957.

	Estimated 1957	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
A	Percentage of annual installations per month...	2%	2%	6%	15%	20%	25%	15%	5%	3%	3%	2%	2%	100%
B	Number of units installed based on 1,000 per year..	20	20	60	150	200	250	150	50	30	30	20	20	1,000
C	Suggested amount of off-season installation allowance	$ 400	$ 400	$ 200	$ 100	..	..	..	$ 100	$ 200	$ 300	$ 400	$ 400	..
D	Cost to manufacturer each month "B" x "C"	$ 8,000	$ 8,000	$12,000	$15,000	..	..	..	$5,000	$6,000	$9,000	$8,000	$8,000	$79,000
E	Recovered by manufacturer due to increased price of $75 per unit	$ 1,500	$ 1,500	$ 4,500	$11,250	$15,000	$18,750	$11,250	$3,750	$2,250	$2,250	$1,500	$1,500	$75,000

Exhibit "Y" Based on Actual Installations Made as Estimated for 1958 Should Exhibit "X" Plan Be Successful

Using same example as above Exhibit "X."

A	Estimated for 1958	5%	5%	10%	10%	15%	20%	15%	4%	4%	4%	4%	4%	100%
B	.....	50	50	100	100	150	200	150	40	40	40	40	40	1,000
C	.....	$ 200	$ 200	$ 100	$ 100	..	..	..	$ 200	$ 200	$ 200	$ 200	$ 200	..
D	.....	$10,000	$10,000	$10,000	$10,000	..	..	..	$8,000	$8,000	$8,000	$8,000	$8,000	$80,000
E	.....	$ 3,750	$ 3,750	$ 7,500	$ 7,500	$11,250	$15,000	$11,250	$3,000	$3,000	$3,000	$3,000	$3,000	$75,000

These two examples demonstrate the flexibility of such a pricing structure for levelling out installations. Each year a manufacturer can re-adjust his monthly allowances and his own net selling prices based on the monthly installation performance of his dealers during the preceding year.

A Plan for Levelling Out Sales

(Concluded from preceding page)

by leading manufacturers would soon have the public educated to the fact that worthwhile savings are obtained by buying in January. (I think that the "impulse" buying in June would continue as ever.)

It is not inconceivable that after a few years of such a pricing program in our industry, with advertising and merchandising keyed to it, this industry could be levelled out—with installations nearly uniform month after month, and over-all total sales much, much higher. Annual readjustments should be made by each manufacturer of both the amount of the installation allowance to be granted and the amount of the reserve fund to be created for this purpose, based on the performance of his dealers during the preceding year.

The sales pitch of air conditioning salesmen need not be changed. Let us sell its advantages and benefits as in the past. But what a sales closer every dealer and salesman would possess! His presentation and proposal to a store owner, factory manager, office manager, and to a homeowner would quote the price of the complete installation exactly as he does now. His proposal would show in addition, the off-season allowance suggested herein. He can be completely truthful in such a presentation by simply stating this off-season allowance is cooperatively created between himself, the wholesaler, and the manufacturer.

The final point in favor of "PLOSAC" (Plan for Levelling Out Sales In Air Conditioning) can be stated in the form of a rhetorical question: "What can we lose?" We see dealers, wholesalers, and manufacturers struggling year after year with identical problems born of feast or famine—problems in financing, warehousing, production schedules, installations, and service—with no real progress towards a solution. IF PLOSAC could be made to work it would be a blessing for the industry and the American public.

Call For Ready-Power
NATURAL GAS
Air Conditioning

and give your customers all these advantages:
- economical Natural Gas fuel
- low, low operating costs
- continuous, variable speed operation
- close temperature and humidity control
- automatic controls
- thermostat or push-button start

Fuel cost less than 1¢ per ton-hour
based on gas at 60c per 1000 cu. ft.

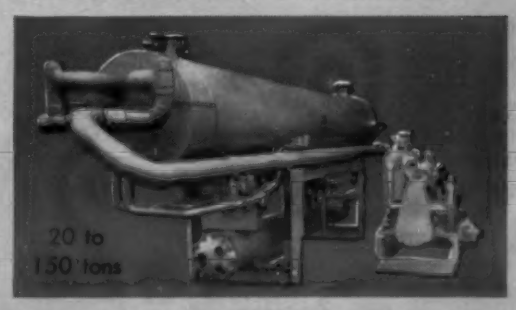
76 Ton Installation at a Country Club—St. Paul, Minnesota

Ready-Power Air Conditioning Units offer every advantage of automatic air conditioning—*at lowest operating costs.* Designed to operate efficiently on economical natural gas, Ready-Power Air Conditioning Units feature a unique system of capacity modulation for high efficiency *continuous cooling.*

Automatic controls allow continuous operation at varying speeds to meet all weather conditions and load requirements. This assures *precise control* of both *temperature* and *humidity* and maximum operating economy at all times.

Ready-Power Air Conditioning Units are adaptable to new or existing installations in sizes up to 76 ton. Multiple units of more than 150 ton capacity have proved highly successful.

Write for complete information.



Matched "Chiller Packages" are now available for all models. Factory piped, wired and tested, these Ready-Power "Packages" give you completely integrated refrigerant systems, require a minimum of installation work, reduce costs.

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Manufacturers of Gas and Diesel Engine Driven Generators and Air Conditioning Units; Gas and Diesel Electric Power Units for Industrial Trucks

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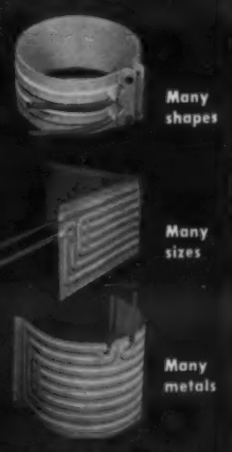
"Job Tailored" to your specifications

A baffling problem? Try a Dean Cold Plate made expressly to suit your particular requirements. Made in a variety of metals in cylinders, U's, angles, tanks, etc.



DEAN PRODUCTS, INC. 1042 Dean St. STerling 9-5400 Brooklyn 38, N.Y.

Choice territories now available for sales representation. Inquiries invited.

Good Room Air Distribution

Study Shows No Single Type of Outlet Provides Optimum Distribution For Both Heating, Cooling

CHICAGO—A review of the fundamentals of good room air distribution was presented by Harold E. Straub, research engineer, Titus Mfg. Corp., at the March meeting of the Illinois Chapter of the American Society of Heating & Air-Conditioning Engineers.

Straub also reported on extensive research studies conducted at the University of Illinois on the subject of room air distribution.

The major goal in the design of every air conditioning system is to produce maximum comfort for the occupants of the conditioned space, it was noted. The room air distribution contributes greatly to the comfort or discomfort because of the physiological responses to air motion and air temperatures.

Unfortunately, the art of air distribution has not advanced to the point where exact results can be predicted in every installation, it was stated. Although portions of the air distribution patterns can be treated analytically, the major results depend to a large extent on the good judgment of the engineer designing the system, the group was told.

Straub referred to research studies conducted in an experimental room at the University of Illinois in which over 300 tests were made with nearly 25 types of supply outlets. From these studies it was concluded that no single type of outlet provided optimum air distribution conditions for year-round air conditioning.

The most acceptable air distribution conditions were observed during the simulated heating season when supply outlets located in or near the floor directed the air horizontally across the floor or vertically with considerable spread. The vertical discharge type of outlet provided acceptable performance over a wide range of air flow rates and velocities. This wide range of air flow rates and velocities was not applicable to the horizontal discharge outlet located near the floor, it was said.

During the simulated cooling season in the experimental room, the most acceptable distribution was observed with supply outlets located in or near the ceiling which discharged the air horizontally or from outlets located in or near the floor that directed the air vertically with little spread.

In cooling an occupied space with vertical discharge supply outlets, there are minimum supply velocities for a given temperature differential in order to obtain acceptable air distribution conditions, the speaker pointed out. The minimum supply velocities for a 20° F. differential with several types of vertical discharge supply outlets were listed as:

A. Floor register, 500 f.p.m.
B. Floor diffuser, 750 f.p.m.
C. Baseboard slot (2 ft. long), 600 f.p.m.

The selection of the type and location of the supply outlet for both heating and cooling applications should not be made without careful consideration being given to the air flow rates and the velocities that may be experienced in the occupied areas of the space, it was stressed.

The results of these studies are reported in greater detail in two Engineering Experiment Station Bulletins published by the University of Illinois at Urbana. These bulletins are:

Bulletin No. 435, "Air Distribution Within a Room for Year-Round Air Conditioning, Part I," by H. E. Straub, S. F. Gilman, and S. Konzo.

Bulletin No. 442, "Air Distribution Within a Room for Year-Round Air Conditioning, Part II," by H. E. Straub and M. M. Chen.

3 Viking Air Products Salesmen Win Plaques

CLEVELAND — Three salesmen who made "outstanding" records in sales of blower assemblies during 1956 were recently presented with plaques by Viking Air Products here.

M. E. Kelley, Cedar Falls, Iowa, was winner of Viking's "Greatest Percentage Increase in Sales" award. Tom McIntyre, Berea, Ohio, won the "Greatest Number of Manufacturers' Approvals" plaque. And Malcolm F. Mackenzie received the award for the "greatest increase in dollar sales to manufacturers" for the year.

Mackenzie was a repeat winner from 1955 when he won the firm's "New Customer" award for securing the most new business that year.

Robert V. Main, manufacturers' sales manager, presided.

Nalley Is Dallas Mgr. For Conditioned Air

DALLAS — Announcement was made recently that J. Robert Nalley has been named manager for Conditioned Air, Inc.'s new Dallas operation at 3210 Elm St.

According to Edward W. Norwood, vice president of the air conditioning firm, Nalley and his organization will handle both large industrial and residential air conditioning equipment for customers in the Gulf Coast and central Texas areas. The Dallas office will also serve Tyler, Wichita Falls, Longview, and other key cities.

Nalley has been active in the air conditioning industry in Dallas for more than 11 years. In 1952 he assisted in establishing the firm of Nalley & Weatherby. He sold out recently to join Conditioner Air.

Recold Expanding Office Facilities

LOS ANGELES—In conjunction with the celebration of its Silver Anniversary year, Recold Corp. here currently has construction under way to expand its office facilities.

The addition, of approximately 2,000 sq. ft., will be used for clerical office space, according to H. T. (Hy) Jarvis, president.

He said this latest addition is a continuation of the company's expansion program.

another secret of Lennox success:

LENNOX Dealers Direct Factory

As a result LENNOX Dealers

1. Get faster shipments
2. Enjoy special credit, financing service
3. Get EXTRA discounts to boost margin
4. Have extra sales, service and planning assistance direct from factory
5. Have fewer "headaches" in every way

AN EXAMPLE OF BENEFIT FROM THIS DIRECT RELATIONSHIP

BUILDER'S PROMOTION

Lennox discovered the importance of the "Woman's Touch" in home building. And—to help Lennox dealers get *more* of the new home business—an exciting new promotional program was developed. Typical of the support Lennox dealers get!

For more information about products advertised on this page use Information Center, page 38.

To Seat 150,000

Largest Enclosed Arena To Feature Some Unique Heating, Ventilating Arrangements

NEW YORK CITY — The largest enclosed arena in the world—it will cover an area equal to 15 city blocks—will incorporate some unique heating and ventilating arrangements, sponsors of the project declare.

The aluminum arena, designed to seat 150,000 spectators, is planned for immediate construction in either Queens or the Bronx by the Greater New York Sports Arena, Inc. It will be called Olympic City.

Dimensions of the arena are 1,400 by 1,080 ft. Its curved roof will span the enormous rectangle without any intermediate column or support to mar the view of the holder of even the lowest-price seat. At the center the roof will rise to a height of 250 ft., equivalent to a 25-story building.

Two major league baseball games, or four football games could be played on its field simultaneously without interfering with each other, the sponsors claim. However, primary purpose of the arena will be for winter harness racing.

Estimated cost is $57,425,000.

The tiered seating areas of the club house and grandstand, the standee terrace and the exhibition hall, will be heated by hot water radiant heat coils embedded in the concrete slabs.

Supplementing the radiant heat will be warmed ventilating air induced mechanically to flow through the entrances to the stands and exhausted through dampered vents in the roof of the building.

This warm air will automatically ventilate this space and even remove the tobacco smoke from the occupied areas.

Public spaces under the stands and entrance lobbies will have mechanical ventilation with filtered and steam heated outdoor air supply. The restaurant, cafeteria, lounges, and administration spaces will have mechanical ventilation with filtered heating and ventilating systems.

Calif. Group Seeks Better Heating, Cooling Installations with Education

LOS ANGELES—The heating and air conditioning industry is determined to bring about upgrading through public demand for better installations, the Los Angeles construction industry was told at a recent Chamber of Commerce meeting by one of its southern California spokesmen.

The speaker was R. E. (Rudie) Harkens, managing director of the Institute of Heating & Air Conditioning Industries, who also pledged support of the institute to the current building industry campaign for home remodeling.

Harkens' talk before a key group of southern California builders, bankers, and loan officials, including Fritz B. Burns, national NAHB and HAREB leader, was the first explanation of a Stamp Plan-financed campaign of consumer education since it was launched by IHACI last Jan. 1.

The meeting was sponsored by Operation Home Improvement under the chairmanship of Mrs. Winifred Pike, aide to Burns, and district OHI director.

Similar talks before BCA chapters and other builder groups are planned by the IHACI Speakers' Committee under William L. Hoyt, Jr.

Delavan Mfg. Plans 2-Story Addition

WEST DES MOINES, Iowa—Delavan Mfg. Co. announced plans to build a two-story addition to its plant here which is expected to increase present facilities about 33%.

Delavan's manufacturing is devoted exclusively to design and production of precision nozzles and accessories, including fuel atomizing nozzles for oil burners.

Work on the new structure is expected to be finished in May. Of the 14,000 sq. ft. to be added, 6,000 will be used for more production facilities, 4,000 for office and engineering space, and the remaining 4,000 allocated to laboratory and experimental facilities, it was noted.

IHACI Plans Awards for Architects, Builders

LOS ANGELES — Plans for annual awards to southern California architects and builders for the best design in the field of health and comfort conditioning were announced by the Institute of Heating and Air Conditioning Industries.

R. E. Harkens, managing director of the institute, said the plans were adopted by its board of directors as part of a public service program which seeks to upgrade installations for better health and comfort through heating and air conditioning.

William L. Hoyt, Jr., chairman of the standards committee, was appointed chairman of the awards committee, which will consist of manufacturer, supplier, contractor, and utility representatives. University faculty members and representatives of leading engineering societies will assist the committee.

The committee appointments will be made by Robert N. Hall, president. Awards presentations will be made at an annual dinner in December.

Harkens said environmental control awards have long been under consideration as a means of dramatizing the extent to which man in modern society has become dependent on artificial climate, and therefore on people who control it.

Kooleraire Opens Branch

NEW YORK CITY—Kooleraire Conditioning Co., Inc., sales and service firm here, announces the opening of a branch office at 785 Old County Rd., Plainview, L. I., N. Y., with Walter D. Douglas as representative.

Profit from Relationship

BECAUSE THERE IS NO MIDDLE MAN
(No Distributor or Jobber)
YOU ARE THE IMPORTANT ONE!

Point your car in any direction—head for any town, any place and take a look at the Lennox dealer's show room. Chances are you'll see enough that you'll know he's both progressive and in the habit of making good money.

One of the reasons he IS consistently in a leading position is that he's on the team with the folks at the factory. He's not an account number on a jobber's books—and he's not buying home comfort equipment from a salesman who has "other fish to fry." He's the *Comfort Craftsman* in his community!

Would you like to be a COMFORT CRAFTSMAN?

Only Lennox dealers—adhering to highest standards of installation and service practices—qualify as *Comfort Craftsmen.* They merit this position of esteem; and Lennox is spending a vast sum of money to tell your customers about the local *Comfort Craftsman.*

LENNOX
comfort craftsman

LENNOX Industries Inc.
Established 1895

Marshalltown, Iowa • Columbus, Ohio • Syracuse, N. Y. • Fort Worth, Texas
Salt Lake City, Utah • Los Angeles, Calif. • Decatur, Georgia • Des Moines, Iowa
Lennox Industries (Canada) Ltd.—Toronto, Montreal, Calgary and Vancouver

Wholesaler's Clinic Shows Products, Problems In Conditioning, Refrigeration; Suggests Replacement, Installation Methods

WICHITA, Kan. — Refrigeration Equipment Co. held a product knowledge clinic here March 15-16 to better acquaint the trade with products and problems encountered in the air conditioning and refrigeration business and offer suggested methods of replacement and installation.

The first day's program was devoted to basic refrigeration and the program for the second day to air conditioning.

COVER BASIC REFRIGERATION

Basic refrigeration was covered in Refrigeration Equipment Co.'s building here where a complete refrigeration system, which incorporated the products discussed by the speakers, had been built by "Reco" personnel to provide working demonstrations.

E. L. Tramposh, president of the company, which has headquarters in Kansas City, Mo., welcomed visitors and explained the purpose of the meeting. Application and service of "Brunner-metic" condensing units was then detailed by Charles Heathman, service manager of Brunner Mfg. Co.

David Belknap, district manager of Penn Controls, Inc., discussed temperature and pressure controls, and C. W. Gaebel, district sales manager, Dunham-Bush, Inc., talked on coil sizing and application.

A buffet supper with door prize drawing preceded the final discussion on the first day's schedule when Robert E. Neidemier, field representative, Sporlan Valve Co., told of "Shooten Service" of expansion and solenoid valves.

AIR CONDITIONING IS SECOND-DAY SUBJECT

Air conditioning was the subject in the ballroom of the Broadview hotel the next day. After welcoming remarks by John McCullough, manager of Reco here, residential and commercial coils and air handling units were covered by C. W. Gaebel. Following this, Edward Rick, Marley Co., and Floyd Fisher, Bell & Gossett Co., discussed water-cooled air conditioning equipment.

H. F. Robinson of Lima Register Co. talked on air distribution before the buffet luncheon. Gaebel led off the afternoon session by speaking on air-cooled condensers for air conditioning before Fred Ladewig, Trane Co., detailed piping layouts. Earl Schribner, O. A. Sutton Co., closed the two-day program with a talk on automotive air conditioning.

Tramposh made it clear that the clinic was "a service that we at Reco, as air conditioning and refrigeration wholesalers, are offering in an effort to prove to all segments of our industry, that your ARW wholesaler is the logical source of, not only supplies, but also product knowledge."

He reminded customers that "this is not a sales program, but a program to better acquaint you with products and problems you encounter in your business." He added that "the wholesaler acts as liaison between the manufacturer and the user." It is a function of service performed by the "complete wholesaler" to have this information available, he said.

It was noted that dealers, contractors, service engineers, maintenance men, and students attended the sessions. Pipe line companies, state institutions, engineering colleges, automotive air conditioning firms, and others sent personnel to the clinic, some coming from 300 or more miles away, it was indicated. McCullough of Wichita and Jed Yeager of the Topeka, Kan. branch developed the program with McCullough presiding.

INSTALL COOLING SYSTEM IN AUTO

A working demonstration involved installing a complete air conditioning system in an automobile.

Of the 87 who registered for the refrigeration session some made comments such as this regarding the clinic:

"This program has meat. It is the equal to any I have attended, and everyone here got something to take home with him."

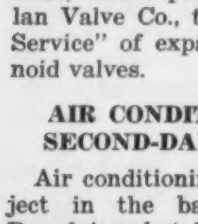
"This was a day devoted to basic refrigeration, but I learned things about refrigeration that I could never get from books."

A total of 134 persons attended the sessions on air conditioning. "Those registered were the trade only and did not include manufacturers or wholesalers," it was pointed out.

ONE of the speakers was Carl Gaebel, Dunham-Bush, Inc. Display shows various workings of valves, etc.

THIS picture of the basic refrigeration meeting shows about half the attendees.

PRESSTITE
165 Cork Insulation Tape



Anti-Sweat Pipe Wrapping

Stops Drip!

See your wholesaler or WRITE

PRESSTITE-KEYSTONE Engineering Products COMPANY

39th & Chouteau, St. Louis, Mo.

Honeywell's answer to residential

GIVE YOUR CUSTOMER PRECISELY

In addition to heat anticipation, Honeywell's new T87 Thermostat has a proved universal mercury switch. It provides cooling anticipation where the control system current is zero to 1.5 amps. *Now one model covers the whole range.* T87 installation is easy, too. Honeywell Sub-Base serves as mounting plate. Being open, it is easily wired. Thermostat simply screws on.

For more information about products advertised on this page use Information Center, page 38.

Air Conditioning Gains of Past 20 Years Point to Even Greater Potential, ASHAE Told

CHICAGO—Tremendous market potential that exists for air conditioning in several fields, particularly homes, trailers, factories, and automobiles, was cited by Walter A. Grant, vice president, Research and Development Div., Carrier Corp., in a paper reviewing the past 20 years of the industry presented before the 63rd annual meeting of the American Society of Heating and Air-Conditioning Engineers here recently.

'LUSH MARKETS ALMOST UNTOUCHED'

"Lush markets of the future are still practically untouched," Grant declared. "Considering all types of dwelling units—single and multi-family houses, apartments, mobile homes—only about 6% have any form of air conditioning at all.

"Although annual shipments of central cooling units in 1956 were around 175,000 units, the total installed to date represents only between 1% and 2% of saturation," he said. "And the other great potential market, comfort cooling of factories, is perhaps 2% air conditioned today.

"The postwar era has also seen the rise of markets barely touched in the 30's," Grant pointed out. "Automobile air conditioning was not a factor until 1951 when about 2,000 units were installed. The 1956 estimate is 300,000 units, and sales for 1961 are projected at 2 million.

"Another new market is the 600,000 existing and 110,000 annual construction of house trailers, where air conditioning is proving just as attractive as in fixed residences," he indicated.

'GREAT POTENTIAL IN EXISTING MARKETS'

While the above mentioned represent new fields for air conditioning, a great potential still exists in the traditional markets, Grant implied.

"It is now estimated that about 90% of all theaters, 35% of motels, 27% of Class A commercial office buildings, 15% of hotel guest rooms and retail stores, and 3% of the churches in this country are air conditioned," he commented.

In order to emphasize the tremendous growth of the air conditioning industry in the past 20 years, Grant explained: "While population between 1936 and 1956 increased by less than a third, and gross national product increased five times, the value of air conditioning sales at consumer prices soared 50-fold from over $48 million to $2,400 million. And most of this increase has occurred since 1946."

Most dramatic gains have perhaps been made by room air conditioners. From 3,000 units in 1936, sales jumped to 1,700,000 in 1956, he said, and the retail price has been slashed from $400 to around $200. Expressed in terms of 1956 dollars, however, room unit price in 1936 was $1,100, or 5½ times today's.

ROOM COOLER SALES JUMP FROM 300,000 TO 1.7 MILLION IN 20 YRS.

Most of Grant's presentation before the ASHAE session was devoted to tracing technical developments in air conditioning, refrigeration, and heating, including changes and improvements in both equipment and application methods.

Taking a quick glance at the future, Grant expressed the view that the "air conditioning industry itself will evolve along well known economic patterns. At it becomes more firmly established on the plateau of maturity, manufacturers will become larger and stronger. Competition will accelerate the trend toward integration to reduce manufacturing costs, and the consumer will be the beneficiary."

SEES MOST PLANTS COOLED WITHIN 20 YEARS

Looking into the "somewhat clouded" crystal ball, Grant predicted that "before the close of the next 20 years, most factories, old and new, will be air conditioned. . . .

"Air conditioning of homes will continue its strikingly vigorous evolution. Many of the changes will be stimulated by prefabrication, be it of the entire house or of particular building blocks. Integration into a unit services package now seems a possible direction, to include refrigeration, freezer, stove, and hot water heater. And a panel in the outside wall will form the condenser to get rid of the heat from the refrigerating machinery.

Increased development of all forms of transportation air conditioning "can be anticipated," he says, and Grant sees possibilities of air conditioned baseball and football stadiums among other developments.

E. H. Markley Dies at 54

PHILADELPHIA — Edward H. Markley of Easton, Pa., engineer in charge of the condenser engineering and vacuum refrigerating department of the Ingersoll-Rand Co., died recently in Bonita Springs, Fla. while on vacation. He was 54.

air conditioning control problems is simple, just

WHAT HE WANTS—AND NEEDS!

Now, combine one Honeywell Thermostat with your choice of 12 Honeywell Sub-Bases—to offer any sequence of operations to meet any heating-cooling need

HERE'S THE most flexible control combination ever conceived for heating-cooling. And the most satisfactory. For the world's most popular thermostat—the Honeywell Round—provides the close sensitive control which means better dehumidification. Its operating differential of only 1° also eliminates the frequent discomfort of those wide temperature swings.

By stocking just one Honeywell Thermostat and combining it with any of 12 Honeywell Sub-Bases—you give customers the *exact* switch and thermostat combination they want to best meet their needs.

Then to complete the system, you choose from specially designed pre-wired Honeywell Control Panels—customized to meet your needs. And that's it—all in one easy-to-stock, easy-to-install system.

Get detailed information on Honeywell's complete line of air conditioning controls. Call your local Honeywell office, or write directly to Honeywell, Dept. AN-4-105, Minneapolis 8, Minnesota.

You offer Honeywell's famous "custom control" air conditioning with this wide range of switching actions.

For use with the famous Honeywell Round T-87 Thermostat

- Q405A—Heat-Off-Cool Fan On-Auto
- Q405B—Heat-Cool Fan On-Auto
- Q405C—Heat-Off-Cool
- Q405D—Heat-Cool
- Q405E—Cool-Auto-Off Fan On-Auto
- Q405F—Heat-Off-Cool Fan On-Auto
- Q405G—Heat-Off-Cool
- Q405H—Cool-Auto-Off (extra pole wired for continuous fan operation)
- Q405L—Cool-Off-Fan

Note: Models of Q405A, C & E are available for providing remote reset of cooling system.

MINNEAPOLIS **Honeywell**

112 offices across the nation Air Conditioning Controls

SAVE $ $ $

WABASH HI-DRI

Lowest Priced Dryer On The Market Today

Because of improved production techniques, we make the lowest priced, quality, heavy duty dryer available. *HI-DRI's* performance tops or equals that of any other dryer. *HI-DRI* has all the same qualities . . . all brass shell, PA-400 silica gel, brass outlet screens, seams silver soldered, 100% guaranteed, but . . . is *lower priced.* Increase your profits by using Wabash. Write for informtaion *today.*

WABASH CORP.
2300 S. Western Ave.
Chicago 8, Ill.

CORROSION

The experienced refrigeration and air conditioning serviceman is familiar with the fundamental principles of several trades and professions. Familiarity with the basic principles of corrosion chemistry can serve as an added valuable tool in his work.

This series of articles by Frank J. Versagi, chief chemist, Mueller Brass Co., will also delve into the causes and effects of corrosion in refrigeration and air conditioning systems. Part I of the series was concerned with chemical corrosion. Part II deals with electrochemical corrosion.

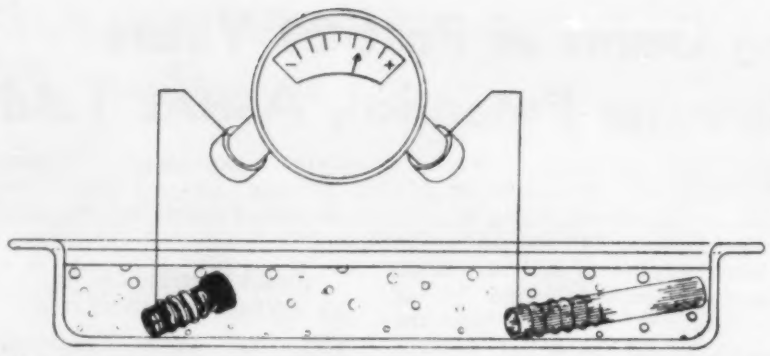
Part 2—Electrochemical Corrosion

By Frank J. Versagi, Chief Chemist, Mueller Brass Co., Port Huron, Mich.

The first article discussed corrosion from the strictly chemical viewpoint. This second article deals with electrochemical corrosion—corrosion which is the result of both chemical action and the flow of electrical current.

In rare cases, it is possible for the electric current alone to be the cause of a failure, but strictly speaking this is not corrosion.

As an example of this type of failure, there was the leaky condenser on a large supermarket air conditioning job. When the condenser tubes were examined, they were found to contain no unusual amounts of corrosion products.



AN IRON bolt and a piece of copper tube, immersed in salt water and joined by a wire, will generate electrical (galvanic) current. The current will pass only as long as the two metals are in electrical contact.

However, there were two tiny pin holes in one tube. The pin holes were not surrounded with corrosion products which would have been the case had the holes been caused by chemical attack. Instead, there was a black, burnt area around the tiny holes.

Investigation revealed that the condenser was serving as a partial ground for the unit, and vibration had caused intermittent contact with resultant arcing or sparking at those points.

Not Corrosion

This is not really corrosion. The incident is mentioned because most servicemen are familiar with the fact that at one time it was quite common for underground piping to corrode or fail either because the pipe was being used as a ground or because stray current from a nearby power source found its way to the metal conductors. This type of ground leakage is no longer common, but the knowledge gained in those days is helpful now.

Only direct current can effectively promote electrochemical corrosion. Alternating current generally is not harmful in this respect. Thus in the case above, if vibration had not caused shorting, there would have been no failure due merely to the fact that the condenser was being used as a partial ground. Practically speaking, from the serviceman's viewpoint, corrosion will not be caused by externally applied electrical current.

Table 1—Galvanic Series Of Metals

CORRODED END (anodic)
Magnesium and alloys
Zinc
Aluminum 2S
Cadmium
Aluminum 17ST
Steel or Iron
Cast Iron
Stainless Steel 18-8 (active)
Lead-Tin Solders
Lead
Tin
Nickel
Brasses
Copper
Bronzes
Monel
Stainless Steel 18-8 (passive)
Silver Solder
Titanium
Silver
Gold
PROTECTED END (cathodic)

Galvanic Current 'Another Matter'

But galvanic current is quite another matter. The terms "galvanic action" and "electrolysis" are loosely used by most tradesmen. They do not mean the same things.

Whenever you join copper to iron, copper to aluminum, iron to aluminum—in fact, whenever any two unlike metals are brought into contact with each other—there is the possibility of an electrochemical type of corrosion called galvanic corrosion.

Galvanic action may not always occur; it most often does not occur. But if the conditions are right, this type of corrosion will take place and one of the metals will be destroyed.

Principle Shown

To demonstrate this principle, drop a piece of iron and a piece of copper into a solution of table salt. Run a wire from each metal to a galvanometer. A current will flow between the copper and iron. If the wire circuit is broken, galvanic current will no longer flow. (The individual pieces of metal may begin to corrode chemically.)

When a galvanic current flows, one of the metals becomes the negative side, or cathode, while the second metal becomes the positive side, or anode. **It is always the positive side—the anode — which will corrode away.**

To determine which metal will become the anode in a given couple we can refer to a list of metals in what is called the galvanic series. (Table 1.) While similar to the activity or electromotive series discussed in

(Continued on next page)

Quality pure
Quantity sure

WITH... Charg-A-Can® PACKAGED REFRIGERANTS

• Factory controlled purity
• Assured accurate charging
• No cylinders, no deposit

There's never a doubt when you use American Potash & Chemical Corporation's accurate, dependable, and economical Charg-A-Can packaged refrigerants.* Dependable *quality* and positive *quantity* are both assured because Charg-A-Cans are filled under carefully controlled factory conditions, with material expertly analyzed for purity and moisture content. Service efficiency is increased because Charg-A-Cans save time, eliminate waste, do away with costly charging racks and cut down on heavy storage and transportation requirements. Stock-up on Charg-A-Cans today and watch service profits soar!

*Charg-A-Can refrigerants are packaged as follows:

"Freon-12"†	95/100 lb.
"Freon-22"†	2 lb.
"Freon-114"†	1 lb.
Sulfur Dioxide	1 lb.
Methyl Chloride	2 lb.

†TRADEMARK OF E. I. DUPONT DE NEMOURS & CO., INC.

For your convenience, Charg-A-Cans are available in six-pack containers for greater ease in handling, stocking, display.

Stocked by refrigeration wholesalers everywhere.

REFRIGERATION DEPARTMENT

TRONA

American Potash & Chemical Corporation

3030 WEST 6TH STREET, LOS ANGELES 54, CALIFORNIA 99 PARK AVENUE, NEW YORK 16, NEW YORK

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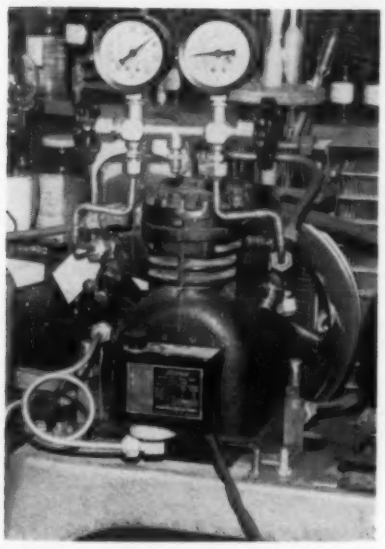


COPPER and brass coupled to steel housing will normally cause no difficulty because of the larger area of the compressor.

Corrosion--

(Continued from preceding page)

the first article, there are some variations between the two.

In the galvanic series, the anodic end is at the top; the cathodic end is at the bottom. The farther apart in the series are any two metals in a couple, the more likely is the corrosion of the anode. Thus, magnesium would more easily corrode when coupled with nickel than when coupled with iron. In all cases, the metal highest in the series becomes the anode.

If galvanic corrosion were to occur at the junction of a brass valve and a cast iron housing, the iron would be the anode. In a copper-aluminum coupling, the aluminum would become the anode.

Fortunately, the mere fact that two unlike metals are in contact does not mean that galvanic action will occur. After all, copper-iron and brass-iron connections have been used for years in refrigeration and plumbing.

When Galvanic Action Occurs

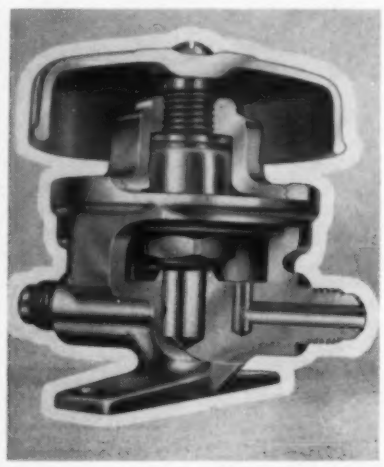
For galvanic action to occur, there must be a liquid or film which will carry the electrical current, thus serving as the electrolyte. If the pieces of iron and copper used in our experiment were wired together and laid on a table, no current would flow through the wire.

However, if an aggressive water is passing through a copper-iron couple, or if an active flux is not wiped off a copper-aluminum joint, galvanic action becomes a greater possibility. It is significant that most failures of a copper-aluminum joint occur on the aluminum side; aluminum would be the anode in any such couple.

Plain steel or iron screens inside a copper drier would become anodic in the case acid were present. Galvanic corrosion would add to any direct chemical attack by the acid on the iron to quickly destroy the effectiveness of the screen.

Stainless steel, such as used in some diaphragm valves, is not anodic to brass, so there is no problem. (Copper and stainless steel are not far enough apart in the galvanic series for the copper to become anodic either.)

It is not always easy to determine that galvanic action is taking place. In fact, galvanic action is frequently blamed where no evidence is available other than the fact that two unlike metals are in contact with each other.



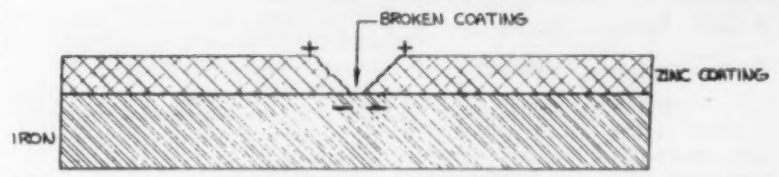
STAINLESS steel diaphragm in brass valve will not corrode because these two metals are not far apart in the galvanic series.

But with the increased use of multiple metals in units, it will pay for manufacturers and servicemen to keep aware of the potential troubles involved by using stainless steel, cast iron, aluminum, copper, and brass in all sorts of combinations.

Means of Combatting Galvanic Corrosion

One of the best means of combatting galvanic corrosion is to make the anode much larger in area than the cathode. Thus the rivets used in construction are always cathodic to the building members themselves. If the rivets were anodic, they would corrode away quickly.

It is fortunate that in most applications where unlike metals are joined in refrigeration and plumbing, the anode area is large. For example, the iron compressor is far larger than the brass valves attached to it; cast iron or steel valves are larger than any copper lines leading to them. The old galvanized iron hot water tank is far larger than the brass valves attached to it.



IRON is actually protected by galvanic corrosion while the zinc coating is sacrificed. Zinc is the anode—iron is the cathode.

Of course, if the two unlike metals can be electrically isolated, galvanic action cannot occur. Dielectric, or non-conducting couplings of all sorts are available for this purpose, and are used by plumbers.

Oddly enough, one of the most effective alternate means of preventing galvanic corrosion is to deliberately make use of its basic principle.

Common galvanized iron is coated with zinc. When a break occurs in the zinc coating in the presence of liquids or in a moist atmosphere, a galvanic couple is set up between the zinc and the iron. The zinc becomes the anode and corrodes away, meanwhile preventing attack on the iron.

Another interesting application of this principle is in the protection of large underground pipes. Magnesium rods, coupled to the pipe with a wire, are placed at a distance from the pipe at intervals of a mile or so.

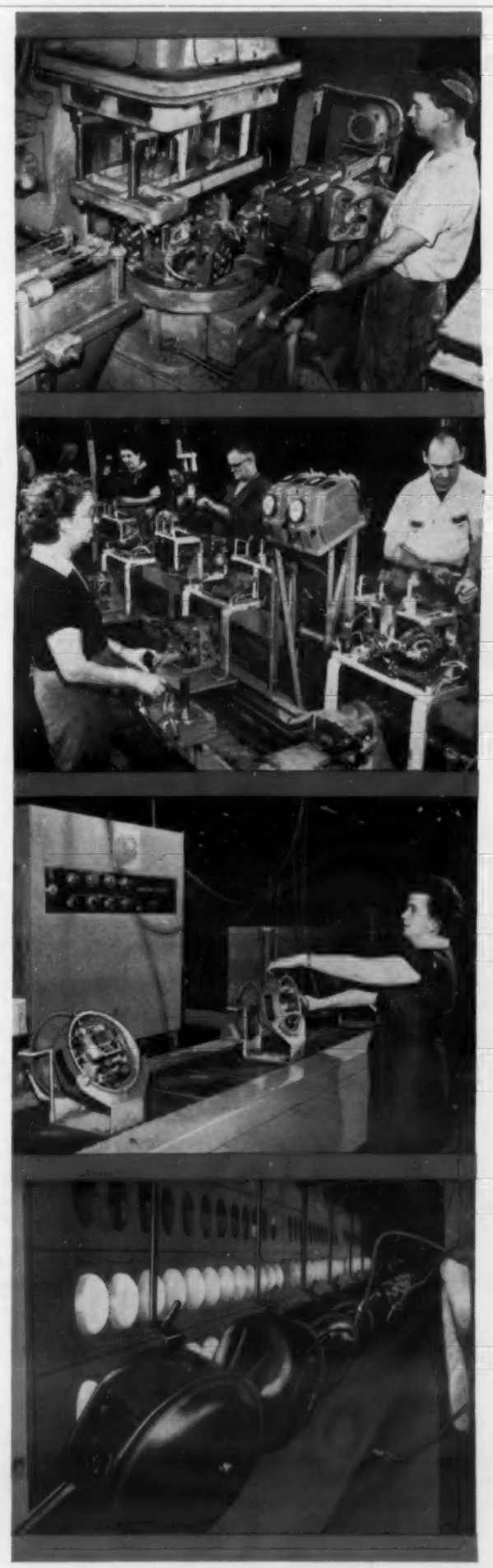
With the moist ground serving as an electrolyte, the magnesium-pipe connection becomes a galvanic couple. Since the magnesium is anodic, the rod is destroyed and the pipe remains uncorroded. The magnesium rods are periodically replaced.

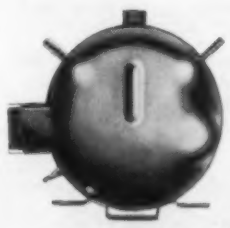
This same principle is being used in some hot water heaters.

(To Be Continued)

TO SERVE YOU BETTER!

Kelvinator's new hermetic production facilities now make available new "SPACE-SAVER" COMPRESSORS built to highest standards of quality, to give you superior performance at competitive prices *—in even greater volume*





New "Space-Saver" hermetics, only 10 11/32" high x 11 3/8" wide x 6 1/4" deep, are truly compact, top quality compressors. They already have thoroughly demonstrated their excellent performance in many applications. Light in weight, low in cost, they are available in natural or forced convection models.

Kelvinator

Division of American Motors Corporation

14250 Plymouth Rd. • Detroit 32, Michigan

American Motors Means More for Americans

SPECIALISTS IN REFRIGERATION SINCE 1914

ASRE Issues Sixth Applications Volume

KEY NO. S-430

NEW YORK CITY—Sixth edition, containing 60 chapters, of the Air Conditioning-Refrigerating Data Book, Applications Volume, was recently published by the American Society of Refrigerating Engineers here.

Complete revisions have been made in eight chapters and moderate revisions in 26 chapters of the volume, according to ASRE. Extensive changes in the bibliography have been made in two chapters. And, ASRE advises, most remaining chapters have been revised to bring them up-to-date with latest practices.

Written by 90 experts, the new edition is edited by Willis R. Woolrich, dean, college of engineering and director, bureau of engineering research, University of Texas. It contains 1,100 pages within its 6½ by 9-in. leather-type cover.

This volume includes design information, formulas, tables, diagrams, and sample engineering calculations in factual handbook style, ASRE said. There are 375 illustrations and 105 tables. The classified section lists manufacturers of components and assembled units of air conditioning and refrigerating units. Price $10.

Offers Data Sources On Gas, Electric Items

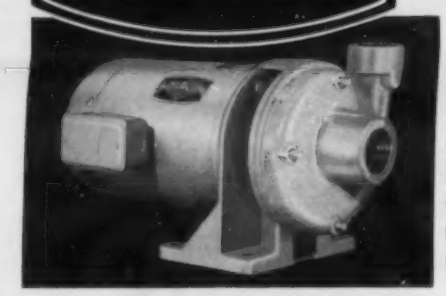
KEY NO. S-431

WASHINGTON, D. C. — "Basic Information Sources on Electrical and Gas Appliances," one of 180 service bulletins of the Department of Commerce, was issued here recently.

Copies may be obtained for 10 cents from Commerce Dept. field offices or from the Business and Defense Services Administration, Dept. of Commerce here.

The bulletin is a compilation of reference material and sources of information relating to the electrical and gas appliance industries. It is designed to provide the user with those tools which will be most helpful in locating needed information.

STA-RITE PUMPS install easily cost less!



It's faster, easier, less expensive to install Sta-Rite Type AC pumps. These pumps are small, easy-to-handle. Because you can rotate the discharge outlet; there are no "fitting-in" headaches. Install—and forget service worries, too. Why? Bronze impellers; full-power motors; leak-proof seal. Best of all try this one for price.

STA-RITE PRODUCTS, INC.
702 S. Eighth St., Delavan, Wisconsin
Los Angeles, Calif. • Chamblee, Ga.

Ask your wholesaler. And write for copy of new bulletin describing Sta-Rite Air Conditioning Pumps.

IN CANADA: STA-RITE PUMPS (CANADA) LTD., AJAX, ONTARIO

Explains 'Adsorbite' Dehydrating Agent

KEY NO. S-432

COLUMBUS, Ohio — How an activated carbon impregnated with an inorganic desiccating agent develops a high capacity for adsorption of water is explained in a new bulletin issued by the Barnebey-Cheney Co.

Now available, the bulletin on "Adsorbite D-8" explains the various uses for the dehydrating agent.

Barnebey-Cheney chemists point out in the bulletin that D-8 is useful as a combination dehydrating and deodorizing agent. It is also a convenient drying agent to use in laboratory desiccators, drying bottles, the protection of fine instruments, and wherever complete moisture removal is needed.

Brochure Covers Counter Line

KEY NO. S-433

HUDSON, N. Y.—Foster Refrigerator Corp., manufacturer of welded all-aluminum refrigerators and freezers, has ready for distribution a brochure on its new counter line.

The brochure explains how the small restaurant or fast food operator "can make extra profits" with Foster's "Self-Contained Kitchen" line of counter refrigerators and freezers.

This new line joined with electric cooking equipment creates a "Self-Contained Kitchen" — six basic self-contained models, 13 basic remote models, and a large number of possible variations, the company said.

Am-Stan Gives Facts on Gas-Fired Winter Units

KEY NO. S-434

NEW YORK CITY—A new full color brochure entitled "Inside Facts on American-Standard Gas-Fired Winter Air Conditioners" has been released by the American-Standard Air Conditioning Div.

Complete line of basement, utility, counterflow, and horizontal models are shown both fully assembled and in cutaway views so that construction and assembly details may be seen at a glance. All major internal components and features are also individually pictured with captions which completely explain the ribbon-type burners, gas manifold, sectional heat exchanger, slide-out blower, enclosed drafthood and controls, alternate filter frame locations, easy disassembly for service or cleaning, and optional legs for basement models.

Back cover of this brochure contains an easy reference chart which gives complete dimensional and rating data for the full line.

G-E Describes 'Tri/Clad 55' Motors

KEY NO. S-435

SCHENECTADY, N. Y.—Available from General Electric Co. is a new eight-page, full-color bulletin on "Tri/Clad 55" motors for single-phase application.

Bulletin GEA-6240A illustrates specific design advantages of single-phase capacitor-type motors, 1-3 hp., 115/230 volts, 60 cycles, for pump and compressor, fan and blower, refrigeration and air conditioning, and other applications.

Dimension data for estimating is given on dripproof, resilient-base, and totally enclosed fan-cooled motors. Rating and type charts offer aid on applications.

Also available from G-E is a four-page bulletin on Tri/Clad 55 polyphase induction motors.

This bulletin — GEC-1420 — contains application data on dripproof and enclosed polyphase induction motors, 1-5 hp.; frames 182-215; 208-220/440, or 550 volts; 60 cycles.

The publication includes charts showing single-speed ratings and frame sizes, typical speed-torque curve, starting torque values, and starting and full-load currents. Cutaway drawings point out construction features. Dimension data is also included.

Simpson Panel Meter Specs, Prices Listed

KEY NO. S-436

CHICAGO — A new six-page panel meter bulletin 2057 was recently released here by Simpson Electric Co.

Descriptions and specifications along with latest prices of the more than 800 models are given. Meter styles and various types of meter movements available are illustrated. Additional information is provided about the company's line of shunts and current transformers available in stock.

Porcelain Enamel Book Covers Shop Methods

KEY NO. S-437

WASHINGTON, D. C.—A 137-page book of the proceedings of the Porcelain Enamel Institute's 18th Annual Shop Practice Forum is now available, the institute has announced.

The forum, held late last year at the University of Illinois, was designed to provide information on the latest techniques, equipment, and processes within the industry.

Copies of the proceedings are available at $5 per copy from the Porcelain Enamel Institute, 1145 Nineteenth St., N.W., Washington, D. C.

Electronic Air Cleaners Covered

KEY NO. S-438

PITTSBURGH—Trion, Inc. issued two new catalogs concerning its new model 6 line of electronic air cleaners. Catalog E-81 deals with home installations and catalog E-82 with installations for small commercial establishments, according to the announcement.

M-H Booklet Puts Answers In Pocket

KEY NO. S-439

MINNEAPOLIS — Residential controls installers and servicemen can now get pocket-size handbooks that contain all questions and answers pertaining to installation and operation of Minneapolis-Honeywell Regulator Co.'s controls.

In five volumes, the handbooks are designed to lessen the load on dealer and serviceman, the company said. Volume 1 is on thermostats, limits, relays, and electric heating. Vol. 2 is concerned with gas controls, No. 3 solves problems surrounding oil controls, and No. 4 has answers to questions on coal burner controls. Vol. 5 pertaining to residential air conditioning, will follow later this year, it was indicated. Books are 5 by 8 in., spiral bound, with blank note pages scattered throughout.

Seton Bulletin Covers Name Plates, Tags

KEY NO. S-4310

NEW HAVEN, Conn. — Seton Name Plate Co. recently issued bulletin 56190 covering its line of name plate, plate cabinet, meter seals, and identification tags.

Specifications, prices, and descriptions add to the illustrations to show the firm's full line.

Outdoor Thermostat System Outlined

KEY NO. S-4311

SCHENECTADY, N. Y. — Bulletin GEA-6530, a four-page, two-color piece, was recently issued here by General Electric Co. to describe operation of its outdoor thermostat control system. Components are illustrated.

Tenney Announces TEH DEFROSTOLATOR

NEW AUTOMATIC DEFROST

At last, an automatic defrost which combines the inherent simplicity of electric defrosting with the frost removal efficiency of hot-gas defrosting.

Yet the defrost mechanism is physically independent of the compressor eliminating restrictions as to the location of the condensing unit.

Positive defrost under any frost accumulation, heavy or light, is assured by the application of a time clock to start the defrost and a pressure control for termination.

Each Tenney TEH-DEFROSTOLATOR is completely self-contained. No additional factory parts are required for multiple unit installations. Same unit cooler is used for single and multiple installations.

Write for complete technical information about sizes and capacities now available. It's in Bulletin 112-57.

CONVENTIONAL STYLE DEFROST TIME CYCLE IS COMPLETED, BUT FROST IS STILL ON COILS.

TENNEY AUTOMATIC DEFROST POSITIVE DEFROST ASSURED BY APPLICATION OF TIME CLOCK TO START AND PRESSURE CONTROL TERMINATION.

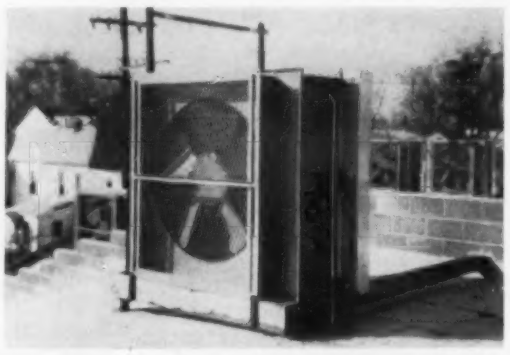
Tenney ENGINEERING, INC.
1090 SPRINGFIELD ROAD, UNION, N. J. Plants: Union, N. J. and Baltimore, Md.

ENGINEERS AND MANUFACTURERS OF REFRIGERATION AND ENVIRONMENTAL TEST EQUIPMENT

FOR MOTOR OVERLOAD PROTECTION

MECHANICAL INDUSTRIES PRODUCTION COMPANY
223 ASH STREET · AKRON, OHIO

For more information about products advertised on this page use Information Center, page 38.



IN FOREGROUND is a Kramer model BD1500 "Unicon" on the roof of station KCRA-TV in Sacramento, Calif. which handles the condensing requirements for the two 5-hp. compressors of a Worthington 10-hp. packaged unit.

Roof-Mounted Air-Cooled Condensers Featured In TV Station's Conditioning

SACRAMENTO, Calif. — Use of roof-mounted air-cooled condensers is a feature of the air conditioning installation serving Station KCRA-TV here.

A major problem faced by all television studios is the tremendous quantity of heat generated by the TV equipment. The life of high-powered vacuum tubes used in these installations can be greatly extended by cooling the air around the tubes.

Actors, Workers Need Cooling

Air conditioning is also needed for the comfort of actors and operating personnel. The huge lights radiate enormous amounts of heat.

The air conditioning equipment installed at Station KCRA-TV to solve this problem includes Kramer Trenton Co. "Unicon" air-cooled condensers.

Leonard D'Ooge, consulting engineer of Sacramento, recommended use of the Unicon condensing system. Since temperatures in Sacramento often reach 107° in summer, D'Ooge reviewed other Unicon installations in hot areas before going ahead with his recommendations.

"Within two weeks of the original start-up date of Sept. 1, 1955 the installation went through daytime temperatures of 108° with no difficulty," it was pointed out.

'Must Have Little Maintenance'

"Being on the air every day of the year, the station's air conditioning must be capable of operating all year long with a minimum of breakdown or maintenance. The Unicons have required no maintainance other than lubrication of motors."

The installation was made in two phases. First, a BD3000 and two BD1500 Unicons were installed on the roof of the studio. The Unicons were only blocked up to keep them level.

The BD3000 operates on a 25-hp. Worthington compressor. Each BD1500 double circuit Unicon operates on a 10-hp. Worthington packaged unit.

Each package unit consists of two 5-hp. compressors. Each compressor is connected to an individual circuit on the Unicon. This affords capacity modulation without loss in operating efficiency, it was noted.

Satisfied with the initial installation, Ewing C. Kelly, general manager of KCRA-TV, and W. Herbert Hartman, chief engineer, approved using another BD2000 Unicon on the air conditioning of a new radio building and studio.

The BD2000 was set up with three individual circuits, each handling a Worthington 5-hp. "Flexicool" packaged air conditioning unit. D'Ooge supervised the installation of all the Unicons for both buildings.

The installation for the TV building was made by Foley Sheet Metal Co. of North Sacramento. The BD2000 for the radio station was installed by Fontaine & Bean Sheet Metal Co. of Sacramento. Robert B. Holland Co. of San Francisco and North Hollywood represented the Kramer Trenton Co.

Conditioned Library

DETROIT — New Chandler Park branch library of the public library system here was recently opened at 12800 Harper. Patrons' comfort is helped by air conditioning and gas heat.

Utility Launches Year-Round Promotion on Heat Pump Sales

TAMPA, Fla.—A year-round drive to promote heat pumps that will reach its peak May, June, and July with an intense advertising campaign has been launched by Tampa Electric Co., utility here.

In a message to heat pump contractors and dealers in its territory, Tampa Electric's President W. C. MacInnes assured them that the utility's "Big Plus" promotion this year combined with their efforts "should realize the greatest sales of heat pumps ever."

Besides newspaper, tradepaper, magazine, television, and billboard advertising, Tampa Electric has prepared manuals for architects and contractors, descriptive handout folders, plans training courses on heat pumps for its own personnel and outside professional groups, and expects to sponsor model homes featuring heat pumps.

In all, the utility lists a 28-point promotional program.

Besides presenting architects and engineers with a complete heat pump manual, Tampa Electric expects to organize tours of user homes for both architects and builders to show heat pumps in actual operation.

Backing up such moves will be increased activity in field tests of heat pumps to develop more useful operation data.

Among the specific aids for dealers and contractors is the company's offer to mail its consumer heat pump folder free to a maximum of 3,000 prospects furnished by the contractor.

Actual Photo of Econo-Pak and Budget-Blower Assemblies in Our Dayton, Ohio, Warehouse.

SERVING YOU FROM A "FULL WAGON"

Prompt Delivery From Full Stock Saves You Time and Money

Your need for rigid inventory control, geared to production, is helped immensely by Lau Econo-Pak.

Our big warehouse stock permits you to order blower assemblies *as you need them*... in the quantities you want, for the production that you estimate.

Specify Econo-Pak and release your inventory investment to work for you in some other part of your business. Save your warehouse space, reduce your inventory costs, make available your supplies for quick delivery to your customers.

Versatile Econo-Pak provides all standard features of famous Lau Series "A" assemblies in a unit adaptable to many needs. *Now* Econo-Pak is also packaged in a pallet of 24, with bulk packaging of hardware, to give you new economy and simplicity of assembly. *Since Econo-Pak enjoys a rapid turnover, Preslok Wheel too, will be incorporated in all units as quickly as dies and tools are ready.*

Yes! When you specify Econo-Pak, you see, you receive so many benefits... you save in so many ways. Why don't you have the Lau representative give you *all* the details on Econo-Pak.

THE LAU BLOWER COMPANY
2027 Home Avenue, Dayton 7, Ohio
Azusa, California. In Canada: The Lau Blower Company of Canada, Ltd., Kitchener, Ontario

World's Largest Manufacturer of Air-Conditioning Blowers

MARSH Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.
PRESSURE GAUGES and Dial Thermometers for all services.
MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.
MARSH INSTRUMENT COMPANY
Sales Affiliate of Jas. P. Marsh Corporation
Dept. D., Skokie, Ill.

OFF THE CHEST

DISSOLUTION FOLLOWS PROFIT EVAPORATION

Houghton's Electrical Service
Litchfield, Mich.

Editor:

Yes, something is wrong—but you are not responsible in any way. Your paper has been produced in a very commendable manner and has been a benefit to me. I am only discontinuing my subscription because I am in the process of dissolving the business that I have been almost 10 years building.

First—and probably the biggest reason — the excessively high cost of just being in a small business is getting increasingly higher, and the "profit margin" is dwindling into thin air. This leaves the incentive to assume risk (capital, etc.) with nothing to thrive on. There are several reasons for the evaporation of profits. One —many wholesalers and equipment distributors are openly soliciting the business of the people and businesses that I serve. They are selling in direct competition with me and at prices that I can not hope to meet. Our refrigeration business is commercial—we serve a packing house, locker plant, stores, beer taverns, and a couple of dairies. Most of these customers have received catalogs from suppliers that quote wholesale prices on the major items of equipment that they need. Two —the present methods of bidding work threaten to undermine sound business practices. Bid shopping is common in both the refrigeration and electrical trades. There is increasing evidence in this area in which I reside of serious intrusion into both trades by the so-called "Basket Contractor." For the most part these are men who hold down good jobs and work on their off time for sub-standard wages. It is not understandable to me why they do it because they could get legitimate pay rates if they asked for them. Three—the overhead expense entailed in running a small business is getting out of all proportion to the size of the operation involved.

I do not doubt that I have made many mistakes and that the business could be streamlined and perhaps be made profitable. The fact remains that I am tired of fighting for the pittance that is left for me at the end of the year.

RALPH P. HOUGHTON

SCORES NBBB ATTITUDE ON ROOM COOLER CLAIMS

The Cincinnati
Air Conditioning Co.
Cincinnati, Ohio

Editor:

Your interest in stabilizing the room unit industry (?) is most commendable.

One point, however, you have let go past you. The Better Business Bureau does not have the clear picture. Read your article on page 4 of the March 11 issue —headed NBBB Recommends— the third from last paragraph— "The National Better Business Bureau takes the position that whenever a claim for cooling capacity is made in advertising, or implied as through a statement of 'tons' or 'horsepower,' the B.t.u. rating should also be disclosed in the ads."

George, this is ridiculous! A ton of refrigeration is 12,000 B.t.u. just as truly as a ton of coal is 2,000 lbs.

Now why should "ton and horsepower" be used synonymously.

As an example—an ad appeared in one of our Cincinnati papers advertising a room air conditioner. It said "One Ton—10,000 B.t.u."

This is just as silly as advertising a ton of coal as 1,850 lbs.

We took it up with our local Better Business Bureau and can never expect to get anywhere as long as their technical staff gives them the information that appeared in the above mentioned article.

In many many years—this is the first mistake I have seen in your wonderful paper.

ARTHUR RADTKE

WANTS GOV'T TO CUT FOREIGN SPENDING

New York City

Editor:

Congratulations on editorial quote Political Reappraisal unquote March 11th stop I believe you are the man to start real campaign against this unbelieveable foreign spending and taxations I wish Washington would give more attention to the Middlewest and less to the Middleeast.

PETER SCHLUMBOHM

SWEATING OUT EDUCATIONAL PROBLEM

Hill York Sales Corp.
Miami, Fla.

Editor:

All of us in this industry are sweating out the educational problem of handling both the public and our own financial affairs in regards to air conditioning-refrigeration and I wish to further compliment the NEWS in your very great contribution to this over-all picture.

R. S. LAFFERTY

LIKES 'INSIDE DOPE'

Cupp, Inc.
Fort Wayne, Ind.

Editor:

Certainly do enjoy your magazine, particularly the "Inside Dope" column.

DANIEL C. SPRINGER

WILL CIRCULARIZE PRICE-CUTTER ITEM

York Corp.
York, Pa.

Editor:

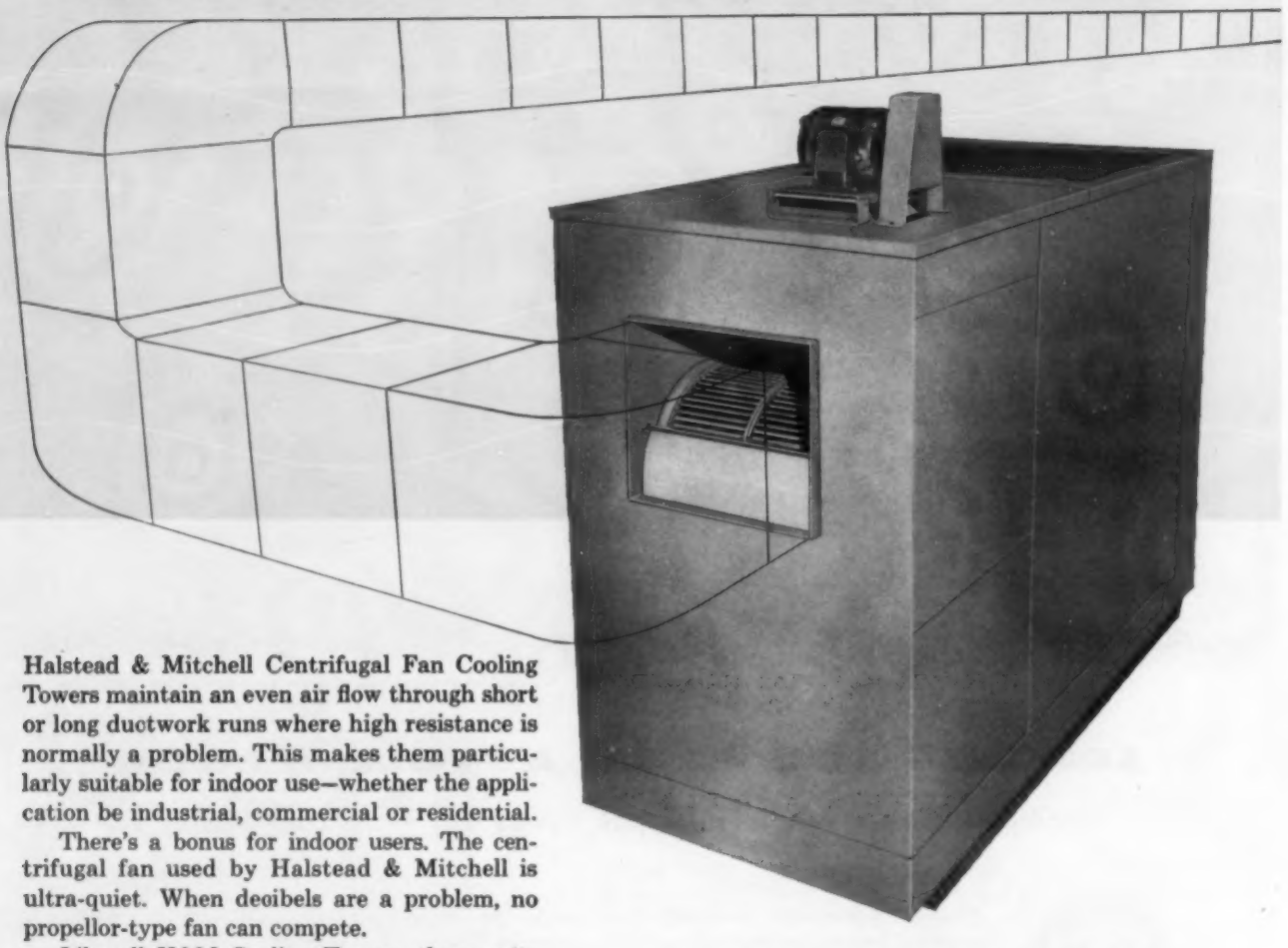
In your March 18 issue, "Inside Dope" carried an article, "How to Checkmate Price-Cutters."

We found this article extremely interesting and worthwhile, and we are writing this letter to ask your permission to reproduce this article in its entirety so that we may circularize it among all our International Distributors.

C. E. RENNINGER

SO HALSTEAD & MITCHELL ENGINEERS SAID:

CENTRIFUGAL FAN COOLING TOWERS ARE IDEAL FOR LONG DUCT RUNS



Halstead & Mitchell Centrifugal Fan Cooling Towers maintain an even air flow through short or long ductwork runs where high resistance is normally a problem. This makes them particularly suitable for indoor use—whether the application be industrial, commercial or residential.

There's a bonus for indoor users. The centrifugal fan used by Halstead & Mitchell is ultra-quiet. When decibels are a problem, no propellor-type fan can compete.

Like all H&M Cooling Towers, these units conserve up to 97% of cooling water used in air conditioning and refrigeration applications. The 20-Year Guarantee on the wetted deck wood against failure due to rotting or attack by fungus is offered by Halstead & Mitchell exclusively. Cabinet steel is triple-protected for extra long life.

TAKE-APART, TOO!

An especially interesting optional feature of the H&M Centrifugal Fan Cooling Tower is found in the Take-Aparts. These can be dismantled for installation in difficult places by removing a few bolts. Basement or rooftop installation becomes easy. The Take-Apart feature is not standard, but may be ordered as an optional extra.

Centrifugal Fan Cooling Towers are available in 5 through 25 ton sizes, or may be paired when larger capacities are required. Write for full details in Bulletin CF 600. *Halstead & Mitchell, Bessemer Bldg., Pittsburgh 22, Pa.*

AVAILABLE AT LEADING WHOLESALERS EVERYWHERE

HM Halstead & Mitchell

AIRO stands for

Speedy, dependable, world-wide service.
Air Conditioning and Refrigeration parts, equipment, supplies.
Write for Wholesale Catalog No. 57

AIRO SUPPLY CO.
2732 N. Ashland Ave., Chicago 14, Ill.

For more information about products advertised on this page use Information Center, page 38.

Now Representing...

BUENSOD-STACEY, INC.—Appointment of **H. L. McMurry & Co.,** as sales representative has been announced. The McMurry company has offices in Jacksonville, Miami, Tampa, Daytona Beach, and Orlando, Fla. The firm has been an air conditioning distributor for some years.

AMANA REFRIGERATION, INC.—**Sun Appliance & Electric, Inc.** has been named wholesaler for Amana freezers, freezer-plus-refrigerators, and built-in freezers and refrigerators in 28 counties in north-central Texas. The distributor's offices are located in Abilene, Texas.

Porter-Burgess Co., Amana distributor in Dallas, will continue to handle the company's air conditioner line in the north-central Texas area.

A. M. BYERS CO.—**Stevens Supply Co.,** Radford, Va., has been appointed distributor of Byers wrought iron pipe.

ANSUL CHEMICAL CO.—Appointment of **Brady Co.,** Appleton, Wis., as the chemical firm's advertising and public relations counsel, has been announced.

ALPHA PLASTICS, INC (Livingston, N. J.)—This manufacturer of rigid polyvinyl chloride pipe has announced appointment of six stocking distributors who will carry the firm's full line.

They include **Mayer-Malbin,** Astoria, L. I., N. Y.

John Wilfert, Inc., Brooklyn.

Ward Bros. Mill Supply, Lockport, N. Y.

J. Heller & Sons, Newark, N. J.

Keenan-Cashman, Bayonne, N. J.

Missouri - Kansas Supply Co., Kansas City, Mo.

BALLY CASE & COOLER CO.—Appointment of **Inter-State Supply, Inc.,** Seattle, as exclusive distributor in Oregon, northern Idaho, and western Montana has been announced.

WHIRLPOOL CORP.—**Carter-Johnson, Inc.** was appointed distributor of the full line of RCA Whirlpool home appliances and Estate gas ranges in the San Diego, Calif. territory. The firm replaces Jerry Achtenhagen & Sons, Inc., whose business it has acquired.

BREWER-TITCHENER CORP.—**International Beverage Supply, Inc.** of New York City, has been named representative to handle BTC's complete line in 30½ states including New York, all of New England, the mid-Atlantic and midwest states, and on the west coast.

WORTHINGTON CORP—Appointment of **Cahn Electric Co., Inc.,** Shreveport, La., as wholesaler of air conditioning equipment in northern Louisiana and southern Arkansas has been announced.

AIRTEMP DIV., CHRYSLER CORP.—**Empire Plumbing Supply Co.,** Utica, N. Y., has been named wholesale distributor in the Utica-Rome - Oneida - Herkimer, N. Y. area. Empire will distribute Airtemp's full line of air conditioning and heating systems.

HUBBELL CORP (Mundelein, Ill.)—Appointment of **McCartney-Denver Co.,** Denver, as exclusive representative in Colorado, western Nebraska, and Wyoming has been announced.

Refrigerative Supply, Ltd., Vancouver, B. C., Can., has been named exclusive representative in Alberta, Saskatchewan, and British Columbia.

Technical Equipment Changes Name, Moves

ALBUQUERQUE, N. M.—New name, Air Conditioning Equipment Co., now identifies the former Technical Equipment Co., Carrier distributorship of New Mexico and west Texas, it was announced.

Quarters have been moved to 1613 Second St., N.W., Albuquerque. Dewey Burnworth continues as president, Pres Gunter as engineer, and Mo Holmen as sales manager and dealer contact man, it was further disclosed.

Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

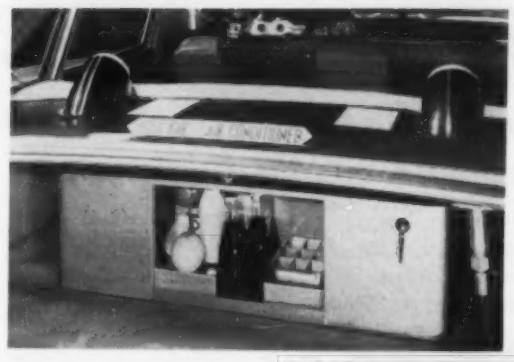
Place your ad today!

Retail Appliance Store To Open In Building Refrigeration Firm Used

LITTLE ROCK, Ark.—Curtis Finch, operator of two appliance stores in the Little Rock area, has leased the building at 311 W. Capitol Ave., formerly occupied by Little Rock Refrigeration Co., and will open a retail appliance store in that structure.

Little Rock Refrigeration, specializing in the sale of commercial refrigeration equipment, will retain an office in the W. Capitol Ave. building, it was indicated, and continue its business there.

Finch's lease on his store at Third and Main Sts., North Little Rock, has been cancelled. He will move the stock, records, and personnel to the new Little Rock location, the retailer announced.



NEWEST "Artic-Kar" ice-making refrigerator of Capitol Refrigeration is housed in the central section of the evaporator of the air conditioning trunk model. It provides refrigerated space 18 by 7 by 8 in. and maintains 35-40° temperature.

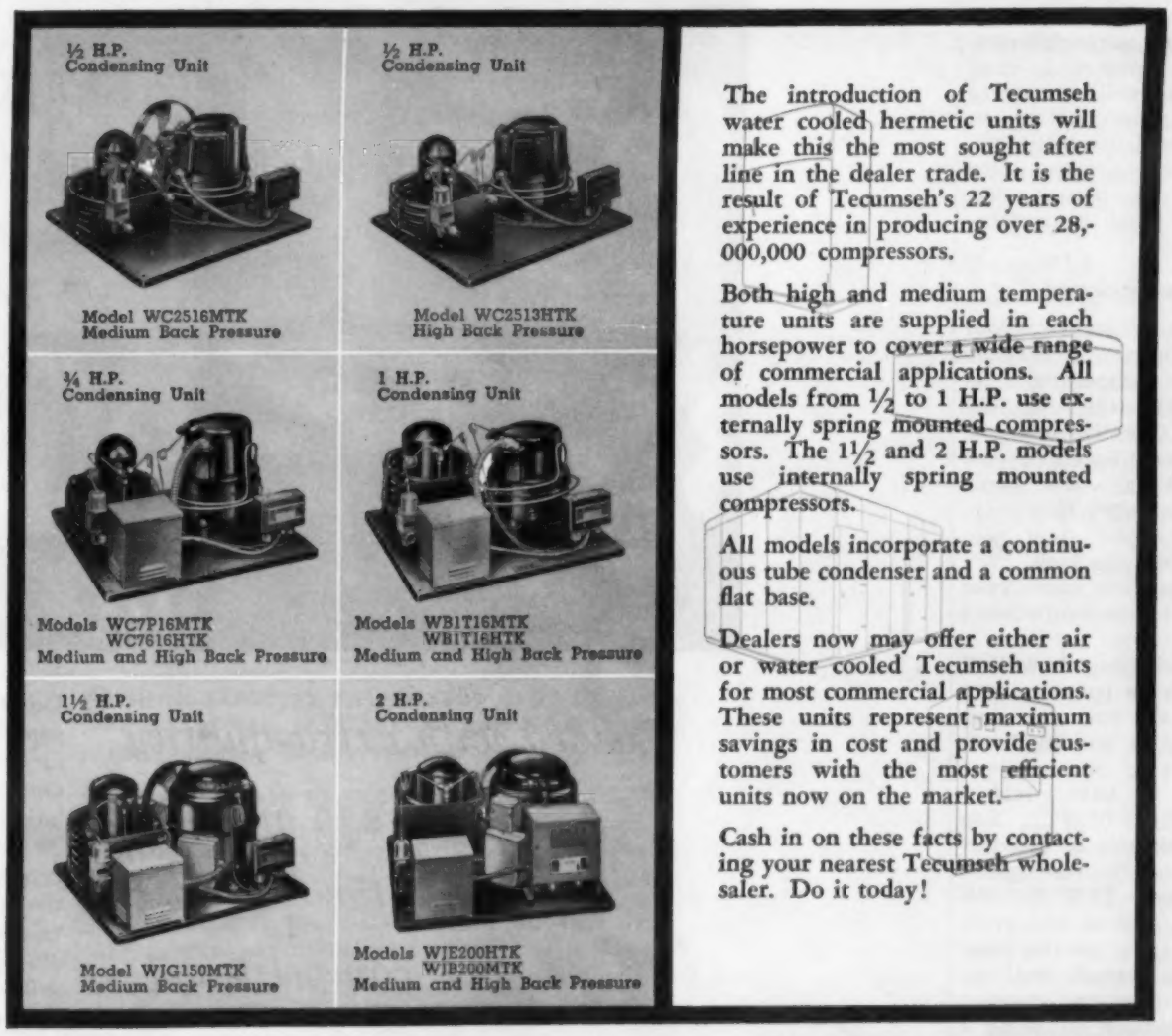
THIS shows the cooling outlet of the air conditioning unit.

NOW for the first time....

Tecumseh

WATER COOLED HERMETIC CONDENSING UNITS

10 Models - ½ - ¾ - 1 - 1½ - 2 H.P.



The introduction of Tecumseh water cooled hermetic units will make this the most sought after line in the dealer trade. It is the result of Tecumseh's 22 years of experience in producing over 28,000,000 compressors.

Both high and medium temperature units are supplied in each horsepower to cover a wide range of commercial applications. All models from ½ to 1 H.P. use externally spring mounted compressors. The 1½ and 2 H.P. models use internally spring mounted compressors.

All models incorporate a continuous tube condenser and a common flat base.

Dealers now may offer either air or water cooled Tecumseh units for most commercial applications. These units represent maximum savings in cost and provide customers with the most efficient units now on the market.

Cash in on these facts by contacting your nearest Tecumseh wholesaler. Do it today!

● ECONOMY ● DEPENDABILITY ● FREEDOM FROM SERVICE

OVER 29,000,000 COMPRESSORS IN USE TODAY

TECUMSEH

The World's Largest Producer of Compressors for the Refrigeration Industry

TECUMSEH PRODUCTS CO. | *Marion, Ohio* *Tecumseh, Michigan*

EXPORT DEPT.—P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

Selling for Profit—*(In Residential Air Conditioning)*

The Salesman's Role In Selling Residential Cooling; Professional Salesmanship Compared To Acting

By Frank Klein

This series of articles is for those who seek to know the basic "appeals" and principles in selling residential air conditioning. This is the fifth article in the series which began in the March 18 issue.

Frank Klein has been associated with the air conditioning and refrigeration industry for over 20 years. An engineering graduate of the University of Michigan, Klein became familiar through work done for the Armed Services during World War II with the medical aspects of properly controlled environments. Since then he has held executive sales positions with a number of air conditioning manufactures. At present he is a partner in Heidenreich, Klein & Associates of Dallas, marketing specialist.

Some of us in this business today act as though originality and common sense have gone out of style.

If you have thus far entrusted the success of your business to your own concept of salesmanship and haven't discovered the parallel of acting to salesmanship you yourself have gone out of style.

Ask any successful sales manager what profession Professional Salesmanship most closely resembles and he will answer—"Acting." Why? Simply because both exert control over the human emotions.

The professional actor dramatizes to set into play the emotions he wishes his audience to feel. The Professional Salesman, by his manner, the use of his voice, the selection of his facts and the way he uses his words, sets out to inspire friendliness, confidence, and interest. These are emotions.

Get Audience To Say 'I'll Buy'

In fact, these emotions are in the difficult realm of feeling, for the actor in most cases merely wants to please by entertaining; the salesman seeks to get his audience to say—"I'll buy!"

If the thought of sincerity pops up in your mind as you read this—stop. No actor becomes truly great until he can honestly portray, with sincerity, the character assigned to him. No honest actor will attempt to portray a characterization he cannot feel and impart the sincerity of that characterization to his audience. No honest salesman will ever touch a questionable product.

4 Parts of the Package

In residential selling your audience is large. It consists of people like yourself who react to emotion—the emotions you arouse in them through you as a "package." To the people you sell YOU are the whole show in one package. This package consists of:

1. How well you look.
2. How well you know your own as well as your competitor's product.
3. How well you show that you like them as people.
4. How well you get over your sincerity in seeking benefits for them.

Elsewhere I have said—KNOW YOUR PRODUCT. You cannot do a sensible or convincing job of product presentation unless you know THE INSIDE STORY. The sale of any product hinges largely on the presentation of a logical, well organized sales plan and story.

The organization of such a plan and story is not difficult, in fact it can be done very simply by using three fundamental building blocks. These are:

1. Know what you are going to say BEFORE you make your call on the prospect. Have it organized in your mind and make a story of it.
2. Learn how to use THE INSIDE STORY of your product and combine this knowledge with imagination. Develop some plan and method to get your prospect to admit his or her desire for residential cooling. (Which in today's market, is not very difficult to do.)
3. Learn how to give a logical sales story and a forceful demonstration of your product in terms of BENEFITS and what they will mean to your prospect.

Curiously enough, there are very few things that you will say throughout your sales story that are as important as the first few words you say to your prospect. In residential selling, where better than 92% of the sales are made in the home, your opening remarks should be built around the impression that you want to SERVE your prospect rather than SELL him.

4 Ways to Frame Opening Remarks

Frame your opening remarks around:

1. Your prospect is THE man you want to see and tell him WHY.
2. Tell your prospect WHO you are and WHOM you represent.
3. State at once the purpose of your call in such a way that your prospect will be in a receptive state of mind for what follows.
4. Attempt to immediately arouse your prospect's interest in hearing the balance of your story.

If you open like this, experience has shown that you will be rarely turned down in getting over your complete sales approach.

Now to the actual presentation of your product. There is no stereotyped "canned" presentation approach. But there are fundamentals, and here are some of them.

Remember first of all . . . in Residential Selling, and I mean creative selling to the existing homeowner or new homeowner, that your initial approaches will be more successful if you make them to THE WOMAN of the house.

It is a well established fact, in Consumer Selling, that women

(Continued on next page)

NEW AMERICAN-Standard AIR CONDITIONING

Loaded with extra-quality features to give you the edge over competition!

Don't be misled by the competitive low price. This is a superbly engineered, quality-built unit that will do an A-1 air conditioning job in the small or medium size house. One reason it excels in its price class is *continuous* air circulation and dehumidification . . . gives your customer uniform 24-hour-a-day comfort! This is made possible by twin compressors: on extremely hot days one operates constantly, the other cuts in and out automatically as needed to maintain ideal temperature and humidity levels. The 2-hp and 3½-hp sizes give you the immediate opportunity to sell the *volume* market, win satisfied customers, and strengthen your position as an air conditioning specialist.

SELL ON AMERICAN-Standard
HOME COMFORT PAYMENT PLAN—
NO MONEY DOWN—TERMS UP TO 36 MONTHS

NEW! AMERICAN-Standard PRE-FABRICATED DUCT SYSTEM

Kit includes pre-fabricated, pre-cut, aluminum-clad fiber glass ducts, air diffusers, return grille and filter. Speeds installation . . . adds extra profit to every job.

For more information about products advertised on this page use Information Center, page 38.

Selling for Profit--

(Continued from preceding page)

respond quicker and more easily to the EMOTIONAL APPEAL of a product. Review your material on HEALTH and COMFORT as NEED factors. These constitute the EMOTIONAL APPEAL that your product's features will have for the woman of the house.

Remember next . . . AFTER your initial approach through the woman of the house, and when you start to work on the husband, determine at once if he is mechanically inclined. If he is, don't insult his intelligence by failing to translate into laymen's language just what makes your product tick—and how it BENEFITS him.

With these fundamentals in mind, first establish briefly and in understandable language (using possibly a diagrammatic story provided you by your manufacturer) just what air conditioning cooling is.

By explaining WHAT happens, you can better explain HOW your product does it better than competition.

'Educational Approach'

Prepare an "educational approach" for your prospect, by:

1. Your explanation of AIR CONDITIONING — WHAT IS IT?

2. The BENEFITS to be derived from air conditioning, bearing strongly on the HEALTH & COMFORT NEED FACTORS.

3. HOW your product best produces these benefits.

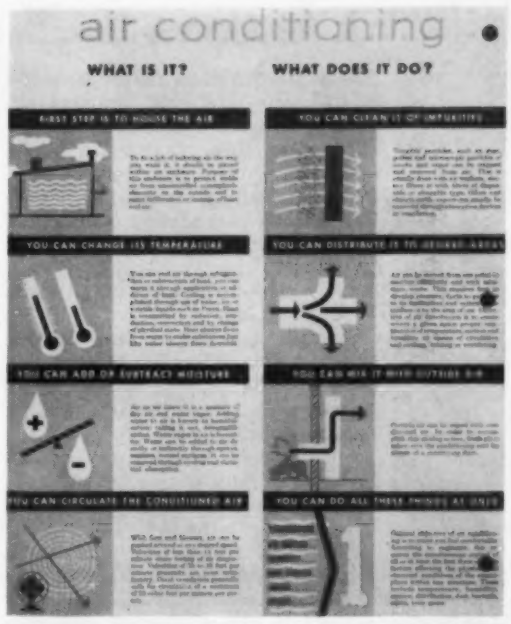
If you are with me up to this point, then take your prospect over the premises and tell him how easily it would be for you to install your system. Take the woman of the house on this tour if possible, for she is going to be vitally concerned on how long it will take, how much of a mess you are going to make, and whether you are going to interfer with any of her pet schemes in interior decoration. SIMPLIFY the story of installation.

From here on out—although you should have started to CLOSE with your opening remarks, you will find yourself in the final home stretch—and summarization for the final close.

Summary

Every sales presentation must have a summary. No salesman or sales manager can "can" a summary any more than he can "can" a sales presentation in general.

Furthermore every successful salesman knows that there is always a point reached from the start to a finish of a sales presentation when a mental green light goes on in his prospect's eyes—telling him to CLOSE. When this green light goes on SUMMARIZE, and do it briefly, concisely, and quickly.



AN EXAMPLE of a graphic guide to air conditioning.

A typical summary should:

1. Quickly review the BENEFITS of air conditioning.

2. Why your product will accomplish these benefits best.

3. Verification of your prospect's confidence in your product and your story of workmanship.

4. Explain the Warranty and Guaranty angles of your product.

5. Open up the availability of a One Year Service-Maintenance Service Contract from you consisting of a monthly preventative maintenance inspection.

6. Tell your prospect how he can buy your product and on what terms. (Make 'em competitive.)

Now strike for those valuable words—"I'LL BUY IT."

Kick off this impulse in your customer with some Sales Starters. A good hard hitting summary will invariably crystallize your prospect's thinking; if he is not quite ready to sign the order, it will bring up some objections, possibly previously overlooked. Answer them—then pepper your final swing at bat with some typical sales starters.

'Barrel' of Sales Starters

There is a whole barrel of sales starters available to you in your own field for use in your closing, such as:

"After all I have said Mr. Prospect, wouldn't you give a lot to know that at the end of each miserably hot and humid day, you could come home to the clean, comfortably cool atmosphere of an air conditioned home? A place where you could stretch out in comfort, watch TV, eat a good meal, and sleep like a baby when you go to bed?"

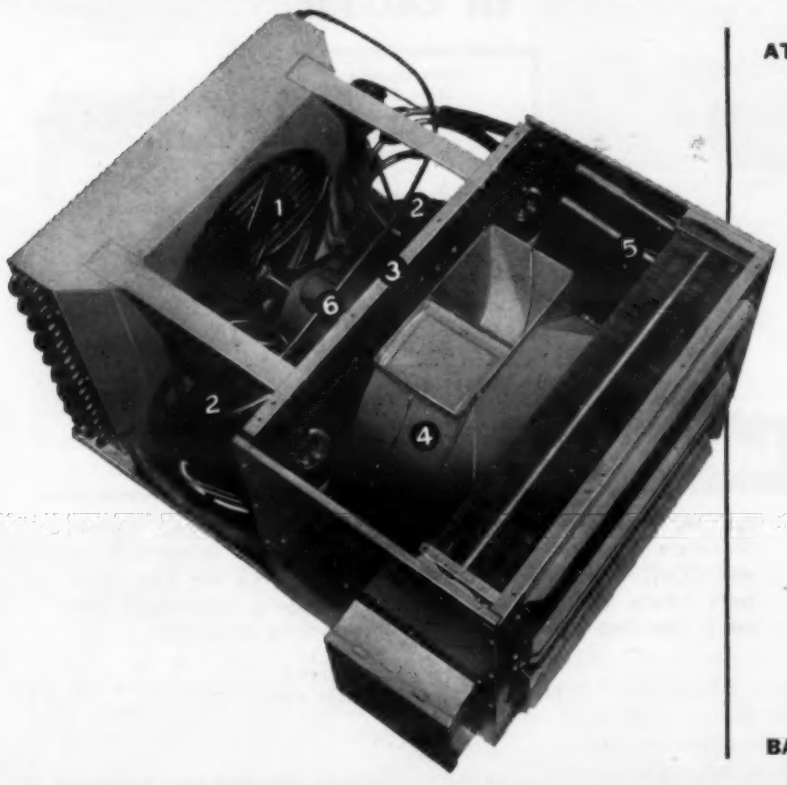
And if you want to fire both barrels, turn to the Housewife and say:

"And Mrs. Prospect, remember too, that on those mild days of spring and fall when actual cooling isn't required, my system will keep on filtering the air, remove excess humidity, and circulate clean fresh air throughout the house.

"Now as the woman of the house, burdened with the monotony and drudgery of day after day cleaning, I feel that you also would give a lot for something that would eliminate better than 90% of that cleaning drudgery and give you more leisure—wouldn't you?"

By this time you have had what you aimed for—your prospect is saying YES! Then swing and bat the ball out of the lot!

$499.50 Suggested Retail Price AIR-COOLED PACKAGE READY NOW!



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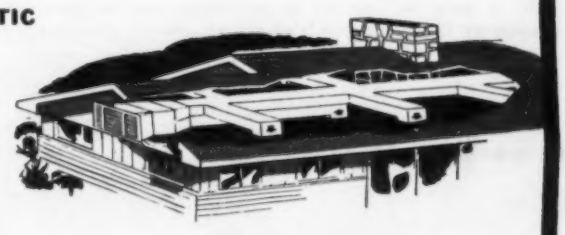
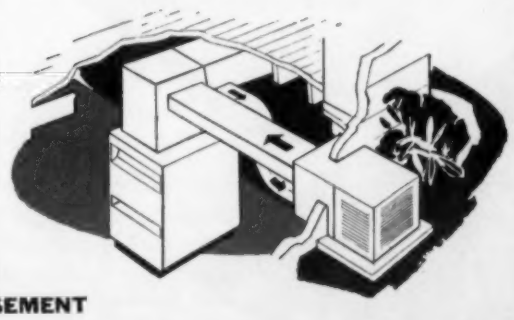


Quick, Easy Installation

The self-contained, air-cooled unit tucks away in attic, in crawl space under house or can be extended through house wall.



BASEMENT

❶ **SPECIALLY DESIGNED CONDENSER FAN** draws in huge volumes of fresh, outside air for maximum efficiency. Moisture removed from the inside air during cooling is blown against the condenser, adding extra cooling capacity.

❷ **POWERFUL TWIN COMPRESSORS** instead of the usual one. Single compressor maintains proper humidity and temperature on normal summer days; on extremely hot days both compressors operate to insure complete comfort.

❸ **100% HERMETICALLY SEALED** refrigerant circuit covered by 5-Year Protection Plan.

❹ **HIGH-CAPACITY EVAPORATOR BLOWER** is whisper-quiet and balanced to the extra-large cooling coil area; engineered for comfortable, draft-free air delivery.

❺ **EXCLUSIVE HEAT EXCHANGER** utilizes "cold" gas leaving evaporator to reduce temperature of "hot" liquid refrigerant entering the cooling coil by as much as 20 degrees. No cooling capacity is wasted—it's all kept inside the house.

❻ **PERMANENT SPLIT-CAPACITOR MOTORS** are resilient mounted and thermal overload protected for quietness and improved safety.

Contact your American-Standard Air Conditioning Distributor listed in the yellow pages of your telephone directory

AMERICAN-Standard

AIR CONDITIONING DIVISION
ELYRIA, OHIO

AMERICAN-Standard PRODUCTS

Trion Expands Electronic Air Cleaner Line

——KEY NO. G-430——

PITTSBURGH—Trion, Inc. recently introduced a new and expanded line of electronic air cleaners, eight models in all, for use in homes and small commercial establishments.

Offering a wider range in capacity than before (1,000 to 9,600 c.f.m.), the new line includes six units produced for the first time. It is said there is now a Trion electronic air cleaner to fit any furnace ranging from 100,000 to 960,000 B.t.u., and any central air cooling unit from 3 to 25-ton capacity.

New model 6 line retails at from $490 to $1,895.

Installation method on two of the new "Automatic Housekeepers" is optional in that they may be suspended from rafters, or set on the floor. These 1,000 to 2,400 c.f.m. models are available with horizontal air flow or vertical air flow. The latter may be used with furnaces of 100,000 to 240,000 B.t.u. or in conjunction with 3 and 5-ton air conditioners.

A new feature available on all models is the option of remotely located power pack. This is said to permit installation of the power pack in an accessible place.

All units are enclosed in eggshell and bronze finished cabinets. They are installed in the return air duct of air conditioning or warm air heating systems.

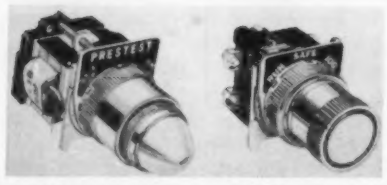
Change 'Intermatic' Commercial Defrost Switch

——KEY NO. G-431——

CHICAGO—International Register Co. recently announced new changes in engineering, design, and manufacturing methods for "Intermatic" T670 series time switch used for automatic defrosting of commercial refrigeration units.

As many as 14 different defrost cycles a day are permitted on the improved unit, all on one dial, it was disclosed. Each cycle is individually adjustable for timings from 5 to 60 minutes. Series T670 is available in 125 or 250 v. models and can be used as three different switches — single pole, single throw, contacts normally closed; single pole, single throw, contacts normally open; and single pole, double throw, alternating contacts.

Housed in a 7¾ by 5 by 3-in. light gray drawn steel case, a spring hasp holds permanently hinged door closed and a hole is provided in hasp for seal or lock.



'PRESTEST' indicating light. 'ROTO-PUSH' button operator.

Adds 2 Oil-Tight Pushbutton Units

——KEY NO. G-432——

MILWAUKEE — Two additions to its line of oil-tight pushbutton units were recently announced by Cutler-Hammer, Inc.

"Roto-Push" operator unit combines functions of a single button station with advantages of a two or three-position selector switch in one model, it was stated. Contacts are maintained or momentarily operated by either turning the guard ring, depressing the button, or a combination of both.

"Pres-Test" indicating light provides a means of checking indicating lights without disturbing the control circuit and without removing a lens or bulb, it was said.

Entire line of pushbuttons offers a back-of-panel depth of $1\frac{23}{32}$ in. for transformer types and $1\frac{7}{8}$ in. for resistor units. Available in key-operated, selector switch, flush button, mushroom head, or knob-operated models, each utilizes a durable, neoprene-diaphragm seal for complete oil-tightness.

Contact blocks are divided into two isolated compartments with individually operating plungers and circuits which both can be normally open, both normally closed, or one normally open, the other closed. Three of these blocks can be so arranged as to provide nearly unlimited circuit flexibility.

'Wedge' Unit Cooler Designed for Reach-Ins

——KEY NO. G-433——

TRENTON, N. J. — A new, smaller "Wedge" unit cooler, designed for reach-in refrigerators as a space saver, has been announced by Kramer Trenton Co. here.

The lower cost Wedge comes in an all-aluminum stucco finished housing with matching safety fan guard. A complete capacity range from 1,030 to 7,500 B.t.u./hr. is offered, the company said.

The redesigned line "takes no more height than an ordinary milk bottle and its wedge shape permits maximum use of shelf space," it was pointed out. "Standard shelving without any special cut-outs can be used.

"The Wedge unit is designed to be mounted to the ceiling of the refrigerator. Air is drawn through the unit and discharged down along the back wall of the refrigerator to minimize sweating on display windows."

The unit is available in four sizes, each an average of 4 in. smaller than previous models. All units are 8½ in. high and $14\frac{5}{16}$ in. deep. They range in length from 16 to 24½ in. This makes the unit ideal for self-service reach-in coolers and conventional units.

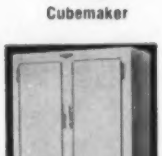
Direct Draw Refrigerated Faucets

Metal Walk-In Cooler

Cubemaker

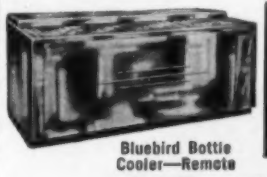
Upright Low Temperature Freezer

EASIER SALES FOR YOU . . . WITH THE COMPLETE LINE FROM LA CROSSE


Reach-In Cooler

La Crosse Self-Contained Bottle Cooler

Supreme Milk or Bottle Cooler


Bluebird Bottle Cooler—Remote

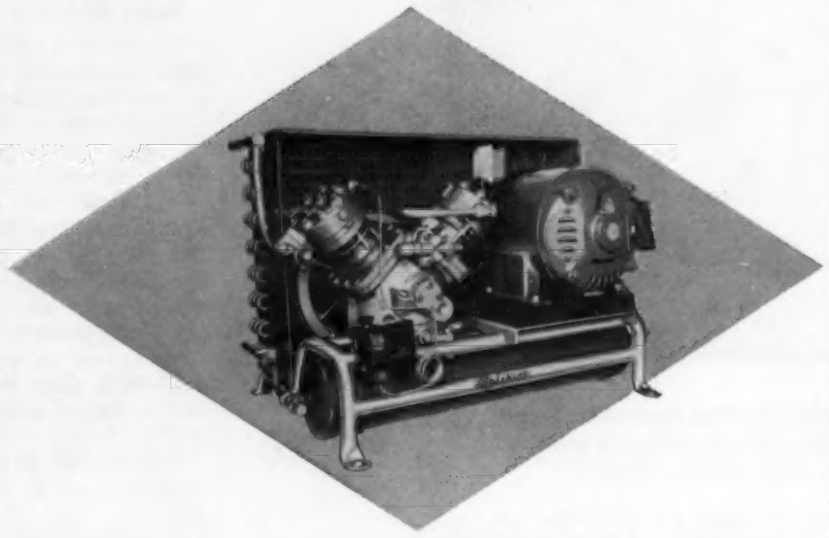
Visit Booths D146-D148 May 6-10 National Restaurant Show, Navy Pier Chicago, Ill.

Drainboard

LA CROSSE COOLER COMPANY
3000 LOSEY BOULEVARD SOUTH, LA CROSSE, WISCONSIN
WALK-IN COOLERS · BEVERAGE COOLERS · DIRECT DRAWS · CUBE MAKERS · DRAINBOARDS
EXPORT OFFICE: 80 BROAD ST., NEW YORK, CABLE: EXIMPORT

LEHIGH BLU-COLD CONDENSING UNITS lead in

ADAPT-ability
DEPEND-ability
FLEX-ability
SERVICE-ability



—and their unique tubular air-frame base adds complete ACCESS-ability!

where "**ability**" counts, specify Lehigh

Lehigh

write now . . . for important, informative catalog

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Information Center

For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised
(list name, page, and issue date)

. . . . . .
. . . . . .
. . . . . .
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What's New or Current Literature Available

Key No. . . . . Key No. . . . . .
Key No. . . . . Key No. . . . . .
Key No. . . . . Key No. . . . . .
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Name . . . . . Title . . . . . .
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Street . . . . . .
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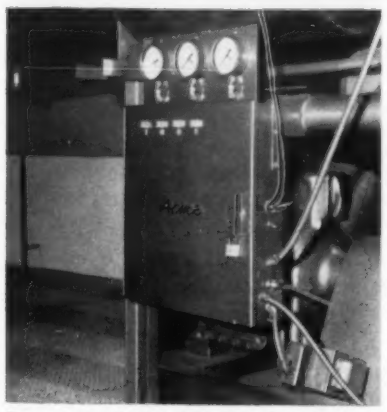
Type of Business . . . . . .

MAIL THIS FORM TO
AIR CONDITIONING & REFRIGERATION NEWS
Readers Service Dept.
450 W. FORT ST. DETROIT 26, MICHIGAN

For more information about products advertised on this page use Information Center, page 38.

Packaged Chillers Range from 20 to 125 Tons



Tamper-proof control panel, shown above, is feature of Acme 'Flow-Therm' packaged liquid chillers.

——KEY NO. G-434——

JACKSON, Mich.—A series of nine, new direct-drive "Flow-Therm" packaged liquid chillers, with capacities ranging from 20 through 125 tons, has been announced by Acme Industries, Inc.

The new series combines the advantages of close-coupled drive between compressor and motor with new engineering features to make the units one of the most advanced large-tonnage packages on the market, the company said.

An innovation is a completely enclosed, tamper-proof control panel of improved design. All controls are grouped within a protective steel cabinet which has a hinged door with padlock hasp.

Reason for the door-locking innovation is to provide a means by which unauthorized personnel can be prevented from "adjusting" the Flow-Therm unit and save possible expensive equipment breakdowns.

A second innovation is a system of pilot lights which warn the operator of open limit switches—another feature which is claimed to assure trouble-free performance.

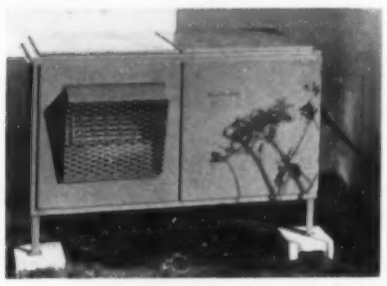
Dependability is stressed in the new series. In addition to the usual factory tests for material and workmanship defects, all Acme packaged chillers are tested under full load conditions before leaving the factory.

A "first" in the industry is the Acme certificate of performance, issued only after each unit performs satisfactorily at its rated performance through seven test procedures, the firm indicated.

Fast, economical installation is assured with all Flow-Therm units because all components and controls are mounted, interconnected, and factory tested.

With factory-installed changeover valves, Flow-Therm liquid chillers become efficient heat pumps—a source of clean, flameless heat in winter, of cool, air conditioned comfort during the summer.

Air-to-Air Heat Pumps Sized 3 to 30 Tons



——KEY NO. G-435——

ORLANDO, Fla. — New air-to-air packaged heat pumps ranging in size from 3 to 30 tons were recently introduced here by WeatherKing of Florida, Inc.

Constructed in two units with compressor section for outdoor installation and compact indoor air handling section, the units require only a small amount of space, according to the manufacturer.

Although air is the normal source of heat, this unit is available with a "heat booster" which uses a small amount of any source of water to supply supplementary heat during periods of low outdoor temperatures.

Booster Pump Added For In-the-Line Use

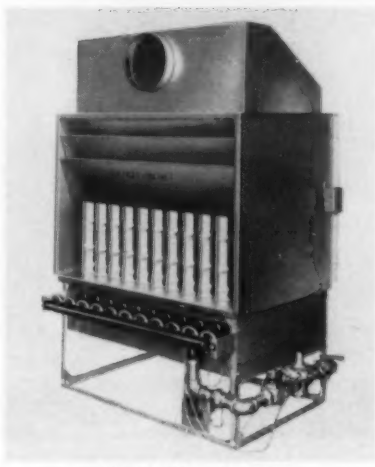
——KEY NO. G-436——

MORTON GROVE, Ill.—A new booster pump was recently developed here by Bell & Gossett.

Designed for in-the-line installation in circulating water systems requiring additional pressure head without added pumping capacity, the pump develops high pressure in all capacities under 20 g.p.m.

For chilled water systems or combination heating and air conditioning systems where there is considerable pressure drop through chiller, condenser, or fan-coil unit series, the unit is supplied in iron or bronze and is adaptable to recirculating faucet water systems in the home.

Payne Offers Aluminized Duct Furnace



——KEY NO. G-437——

MONROVIA, Calif. — Addition of a new aluminized duct furnace to its line of forced air, space heating, and air conditioning equipment was announced by Payne Co.

Designed for commercial and industrial applications, the new line will be available in four basic sizes—200,000, 280,000, 360,000, and 440,000 B.t.u. inputs for natural gas (slightly lower for LP gases).

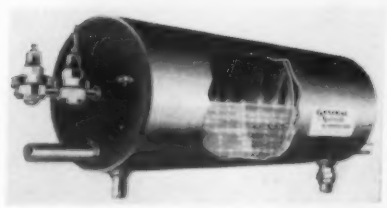
Featuring a new aluminized heat exchanger and AGA approved for as low as 50° temperature rise through the furnace, the ADF line can be used in combinations up to 1,760,000 B.t.u.h. input. Compactness and low height of 51 in. plus draft diverter are other features, the company said.

All units are equipped with Honeywell controls and Baso safety pilots and may be combined with Payne air conditioning equipment for year-round comfort, the company said.

Dual 'De-Airator' Bars Air Blocks

——KEY NO. G-438——

BALTIMORE—Designed for installation in any hot water heating system, the new dual "De-Airator" tank produced by General Automatic Products Corp. eliminates air blocks, it was announced. Tank effectively traps and prevents air from getting into the heating system, assuring a steady flow of water at full-rated capacity, the company said. De-Airator provides gradual build-up eliminating shock and expansion noises. It prevents air clogging and makes air vents unnecessary.



Complete in three sizes, the unit is equipped with one automatic pressure reducing and relief valve and two key air vents. All pipe tappings are 1¼ in.

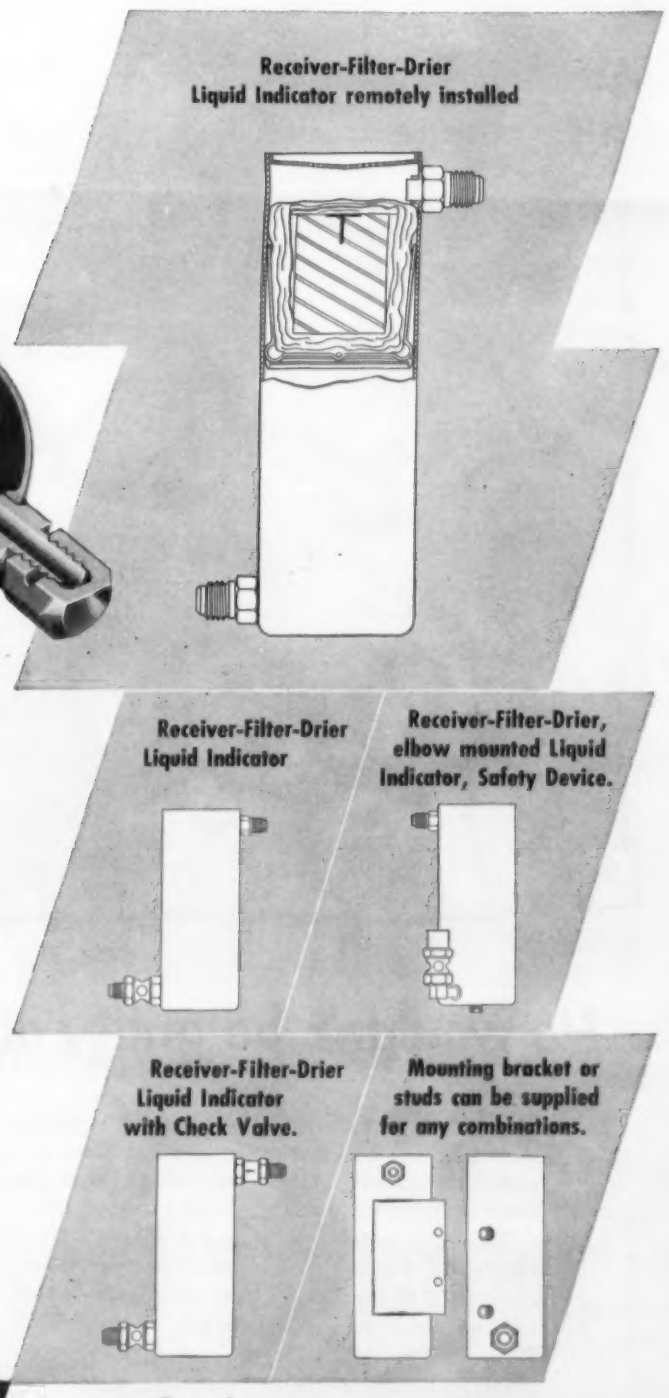
Sizes 1 is for up to 500 sq. ft. hot water radiation 12 by 24 in., 2 for up to 1,000 sq. ft. 12 by 36 in., and 3 for up to 1,500 sq. ft. 12 by 48 in.

(See additional What's New Stories on page 40.)

in how many combinations do manufacturers use

SUPER-FLO FILTER-DRIERS?

Available with SAE flare or sweat connections in brass or steel thru 20 tons.



More than 100 manufacturers specify Super-Flo Filter-Driers as original equipment. Many use this outstanding filter-drier in combination with some other Remco component.

The air conditioning and refrigeration manufacturer rush to Remco Super-Flo began as a result of . . . low, low cost . . . massive depth filtering which removes unprecedented quantities of minute foreign particles . . . permanent drying at peak efficiency even at liquid line temperatures through 150°F . . . excellent acid control . . . and no measurable pressure drop!

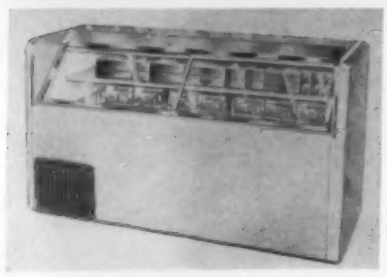
Manufacturers found the U/L approved steel shell makes a wonderful receiver. Now by adding a U/L approved Remco E-Z-SEE Liquid Indicator . . . a high pressure Remco check valve . . . or a Remco safety device . . . the factory-assembled and tested combinations become virtually endless.

All Super-Flo Filter-Driers and combinations are tested, dehydrated and moisture-vapor sealed for your protection. Write for low net prices and for Bulletin R-11 which gives engineering details.

AVAILABLE TO THE TRADE THRU WHOLESALERS EVERYWHERE

REMCO INC.
ZELIENOPLE, PA.

% STANDARD



Offers Portable Angle Freezer

——KEY NO. G-439——

PHILADELPHIA — A self-contained portable angle freezer display case was offered here recently by Howard Refrigerator Co., Inc.

Made in 4, 6, and 8-ft. lengths, the frozen food and ice cream case can be used in either wall or counter lineup. Sub-zero temperatures are maintained as much as 20° below to the upper display shelf, the company claims.

Model CV40 is 25½ by 38½ in. with a 1-in. high 18-in. wide Formica top. The 4-ft. unit has two dividers and doors, a ¼-hp. compressor, holds 270 lbs., 415 packages or 420 pints in its 10 cu. ft. The 6-ft. model has four dividers, two doors, a ⅓-hp. compressor, holds 440 lbs., 625 packages or 633 pints in its 13 cu. ft. Five dividers, three doors, a ½-hp. compressor, 600 lbs., 850 packages or 920 pints in 18 cu. ft. capacity are features of the 8-ft. freezer.

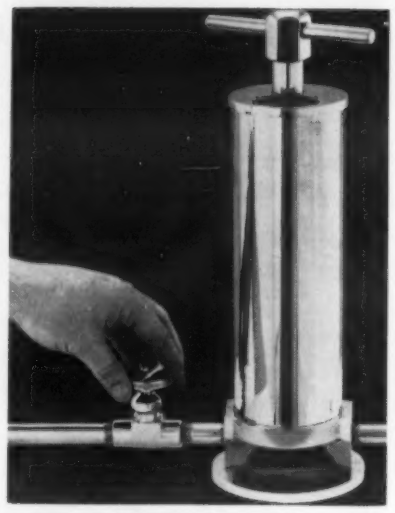
Exterior is white baked enamel, interior finish silver baked enamel with Fiberglas "Vaporsealed" insulation on the unit. It has automatic adjustable control all-copper refrigerant coils.

'MIK' Filtration Units Remove Water Particles

——KEY NO. G-4310——

STROUDSBURG, Pa. — New "MIK" filtration units have been developed to meet specific current needs of the air conditioning and refrigeration industries for removal of particles from water by Heico, Inc.

Lower operating and maintenance costs are claimed to result from use of physically pure water produced by the units. Lines are kept free of particulate matter that in time produces clogging.



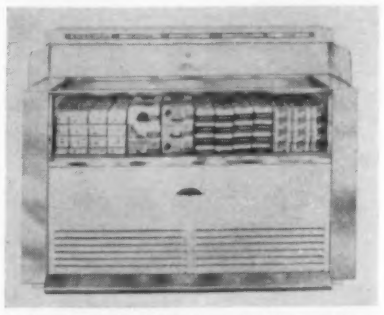
Heico MIK permanent cartridge makes possible production of pure water in capacities of from 3 to 10 g.p.m. and removes all impurities larger than the rated densities of the cartridge, the company said.

Unit Merchandises Ice Cream, Frozen Foods

——KEY NO. G-4311——

PHILADELPHIA—A new merchandising unit for packaged ice cream or frozen foods was introduced by the Fischman Co. here.

Cabinet of model 630 "Sub-Zero" merchandising case provides "Sell-A-Vision" for every package, the company said. Of white baked enamel with stainless steel trim, the cabinet has approved insulation, full visibility display, flood lighting for the superstructure, night covers, and a ¾-hp. compressor with positive temperature control and automatic defrost system.



Capacity is about 13 cu. ft. (about 700 pints) and dimensions are over-all 70 by 31½ by 42 in. with a height of 53 in. to top of the superstructure, the company said.

'Cool-Queen' Auto Air Conditioner Introduced

——KEY NO. G-4312——

WICHITA, Kan.—A new auto air conditioner, the "Cool Queen," was recently placed on the national market by Klauss-Joyce, Inc. here. General sales offices are in Dallas.

Built on contract by O. A. Sutton Corp., the Cool Queen is equipped with new "Frio-matic" temperature control with clutch. It cools the car without louver adjustment from its six air outlets, it was stated.

Easy to install, transferable from one car to another, the Cool Queen is backed by a written guarantee, it was added.

Hand Tool Cuts 90° Notches 1-In. Deep

——KEY NO. G-4313——

ROCKFORD, Ill.—A light hand tool which cuts 90° notches up to 1 in. deep in all thicknesses of metal up to and including 16-gauge mild steel or equivalent was introduced here recently by Whitney Metal Tool Co.

Blade is designed with a slightly hooked shape, not only for sheaving action and easier cutting but also that the top may be engaged on a punch prick for accurate location of the notch, the company said.

No 241 notcher weighs 7 lbs. Notching die is fixed to the end of the one handle. Blade is operated by a double lever or linkage action to multiply force exerted.

Used for several different types of notching operations, the unit notches 90° with sides of the cut at 45° to the edge of the sheet. Square of oddly angled notches can be made in corners of the sheet, up to 1½ in. on a side. Corners can be sheaved off at 45° or any other angle with side length of 1½ in.

The tool notches flanges and folded-up edges, in narrow channels, decorative moldings, etc., it was said. Blade holder is shaped to provide instant registering of the cut in one flange with corresponding cut in the other where flanges are 1 in. or less apart. It sells for $25 complete.

He wouldn't be guilty of leaving fingerprints!

The hands that go into these goatskin gloves belong to a skilled worker in General Electric's new Tyler, Texas plant where whole-house air conditioning equipment is built.

The reason for the goatskin gloves? Even the barely perceptible perspiration that forms on human fingers would have an adverse effect on the compressors which are the heart of General Electric central system air conditioning. In any necessary handling before the compressor is factory-sealed for protection, goatskin gloves are worn.

This is an extra step we take—one of the many ways we safeguard the quality of our products. And this quality control, standard practice at Tyler, Texas, is far-reaching in its effects. Wherever you may install General Electric Home Heating and Cooling systems it is your assurance of the kind of user satisfaction that means customer good will and continued profits. General Electric Home Heating and Cooling Dept., Tyler, Texas.

Progress Is Our Most Important Product

GENERAL ELECTRIC

HY-LO MODEL C

CONDENSATE PUMPS

- ECONOMICAL
- DEPENDABLE
- HEADS to 20 FT.
- DOUBLE INLET
- 115 V. OR 220 V.

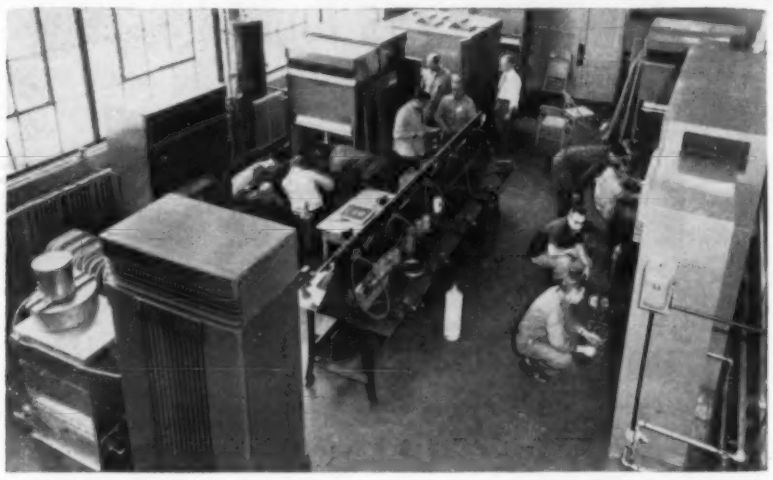
WRITE TO

EDDINGTON METAL SPEC. CO.

EDDINGTON, PA., U.S.A.

For more information about products advertised on this page use Information Center, page 38.

American Blower Schools Open to Anyone Interested In Air Conditioning



Hajoca Corp. representatives engaged in laboratory projects during the service course at American Blower's new commercial Air Conditioning Training School. Note range of equipment provided in laboratory.

DEARBORN, Mich. — The first service course offered at the new American Blower commercial air conditioning training school was filled by representatives of Hajoca Corp., eastern heating and air conditioning distributor, whose home office is in Philadelphia.

Twelve service representatives from various Hajoca district offices in the east and southeast and one man from the distributor's headquarters office completed the five-day course.

The new school is located in the main plant of American Blower Div. of American-Standard in Dearborn. The program includes a series of five-day application courses in addition to the service courses. The first application course was completed Feb. 8.

Admission to the school is by application to American Blower Div., Detroit 32, Mich. A feature of the program is that registrants need not be representatives of an American Blower distributor or dealer to qualify for acceptance.

"All courses are open to employes of any heating, ventilating, or air conditioning distributor, dealer, contractor, or service shop and to employes of any consulting engineering firm interested in expanding their technical knowledge.

"The school's laboratory facilities are complete, including the full range of C.A.C. units to provide the student with the broadest possible experience in actual lab practice. The equipment includes four 3-ton packaged conditioners, three 5-ton units, two rated at 10 tons, and one large 20-ton machine.

"A work table containing 10 acetylene type torches for soldering, brazing, and other service functions is located in the center of the lab. A water tower, connected to one of the 5-ton conditioners, completes the laboratory equipment.

"Instructor for the school is Kenneth Russell who has had broad experience in the air conditioning field as a serviceman, trouble-shooter, and teacher. Each service course includes classroom and laboratory sessions.

"The laboratory projects cover the full range of problems and operations, beginning with basic service functions and proceeding to such functions as leak detection, refrigerant transfer, electrical trouble-shooting, and refrigerant flow problems."

Application courses are limited to 20 registrants, service courses to 10.

Reading Begins Delivery Of Integral Finned Tubing

READING, Pa. — Reading Tube Corp. here announced that it has begun delivery of its new integral finned tube to be marketed under the name "Readi-Fin."

Heading the list of the many advantages of Readi-Fin to the heat transfer industry are its claims to cut tubing requirements substantially, increase efficiency, cut size of units needed, and cut costs.

Among its other claimed advantages are that "it will not foul, is easily fabricated, is of high quality, of rugged construction, and has exceptional utility value."

Reading noted that it has produced the new tube with new equipment just installed.

"Readi-Fin integral finned tube is made from one piece of copper," it was explained. "The fins are actually extruded or formed from a portion of the tube wall. This 'one piece' construction provides maximum heat transfer efficiency."

Due to the fact that the extended surface has been extruded from the tube wall, Readi-Fin "eliminates the possibility of fin failures that occur due to thermal shock, corrosion, and erosion," it was stated. Corrugations on the inside wall of the tube are said to result in a higher heat transfer rate.

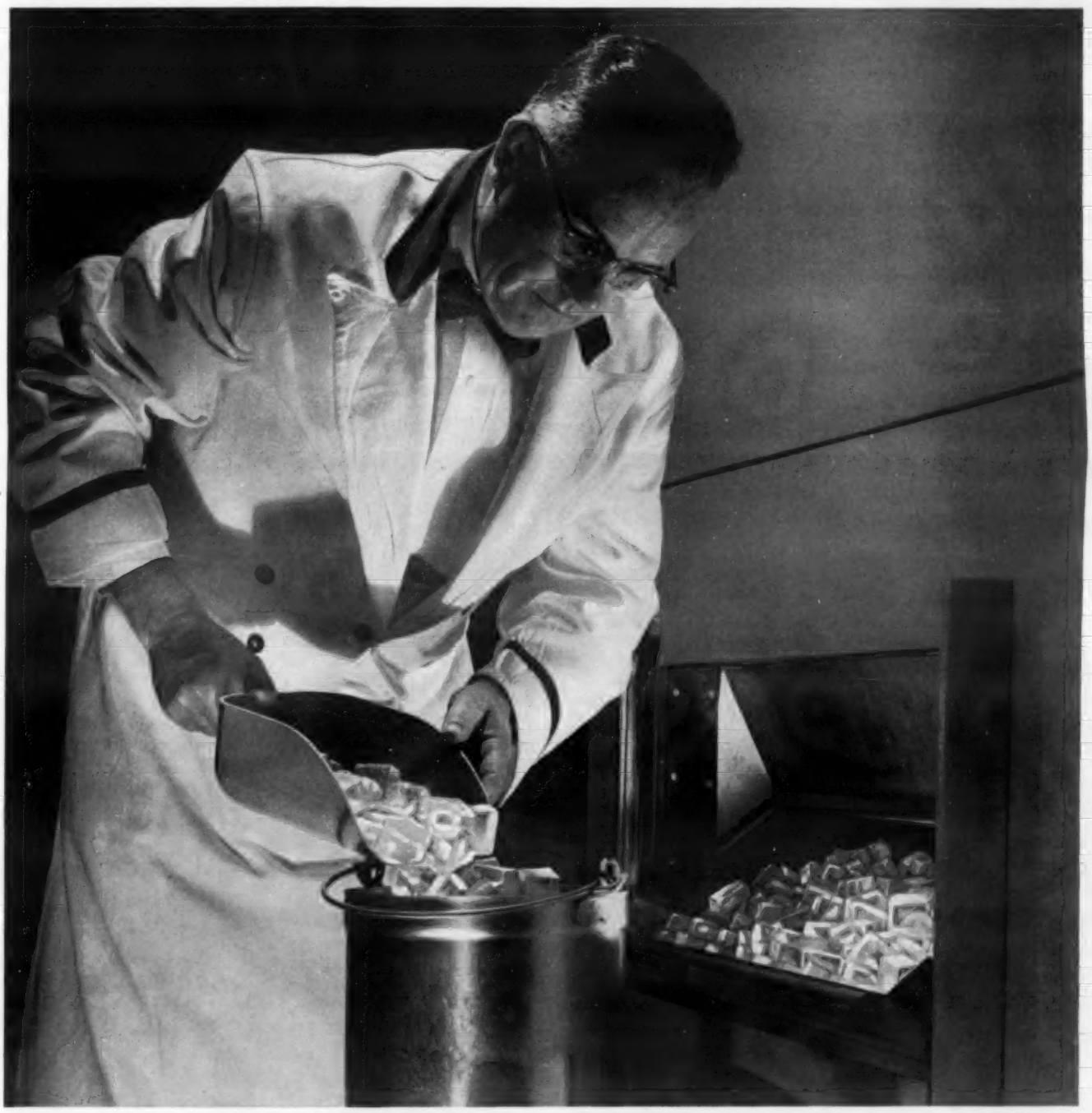
The new integral finned tube is offered in two types—type W/H and type S/T. Type W/H is available in long lengths, with either plain or finned ends.

"Outside diameter of the plain end is slightly less than the outside diameter of the finned portion of the tube," it was pointed out. "This design feature is especially advantageous in the fabrication of coils using standard fittings and provides maximum rigidity and protection at the end connections.

"Wall thickness at the plain ends is heavier than at the finned portion of the tube, resulting in a much stronger coil and permitting excellent brazing of fittings.

Readi-Fin S/T—extended surface tube—is designed primarily for shell and tube heat exchangers.

The outside diameter of the plain ends is approximately the same as the outside diameter of the fin. Type S/T, with plain ends, is fabricated in shell and tube heat exchangers just as plain condenser tubing.



Every cube sparkling clean, odorfree

Nothing ruins an otherwise perfect meal or drink more quickly than a sip of water or beverage iced with dirty, smelly cubes. Conversely, clean, odorfree ice is an important mark of fine service.

Ice machines kept clean with "Virginia's" new ice machine cleaner can be relied on to deliver ice which is of uniformly high quality. And it is more than just another cleaner; it removes scale and slime, to further assure ice that is sweet and crystal clear.

This new ice machine cleaner is both economical and easy to use—one or two 5-ounce tubes generally does the trick. Circulate the cleaning solution for just a few minutes, rinse several times in clean water, and the job is done.

Order from your favorite wholesaler today. Or write to Refrigeration Division, VIRGINIA SMELTING CO., 151 Jefferson St., West Norfolk, Va.

"Virginia" Water Treatment Products include Ice Machine Cleaner; Algae-Cides No. 1 and No. 2; Scale Remover; Scale Inhibitor

VIRGINIA® Chemicals

ESOTOO • KINETIC CHEMICAL'S "FREON" REFRIGERANTS • V-METH-L
CAN-O-GAS • PERMAGUM • PRESSTITE TAPE • KWIKWRAP
SUNISO REFRIGERATION OILS • WATER TREATMENT PRODUCTS

Available in Canada and many other countries

NEW WATERLESS CENTRAL COOLING

WILLIAMSON Waterless Wethermatic AIRefrigeration units can be added quickly and easily to any residential or store forced air heating system. Choose from plenum, duct, counterflow, suspended horizontal or console types for efficient low cost operation.

Plenum type illustrated may be installed above or below furnace.

- No water needed
- No sewer or water connections
- No costly maintenance
- Pre-wired for easy installation
- 2, 3, 4, 5, and 7½ ton models
- Full tonnage provided

Write for complete information today

WILLIAMSON WETHERMATIC

AIRefrigeration

THE WILLIAMSON CO., 3320-E4 Madison Rd., Cincinnati 9, Ohio

No Gloves! No Neutralizer! Safe! Effective!

SOLVEX

For better cleaning, maintenance and protection of air conditioning and refrigeration systems, specify Solvex products. These time-proved materials are safe to use . . . will not harm user or equipment . . . actually help preserve metal parts. Effective, yet you need no gloves, no neutralizer. With Solvex, most systems can be cleaned while in operation. Specify Solvex, and get the finest quality — for safe, effective cleaning and maintenance.

ULTRA SOLVEX

Recommended for the hard jobs. Grains in 10, 25, 50 and 100-lb. containers.

SOLVEX

An economical cleaner for average jobs. Grains in 25, 50, and 100-lbs. and handy tablets.

CSCO MAINTENANCE FORMULA

Seals out scale and corrosion. Grains in 25, 50 and 100-lb. containers, and handy tablets in 10-lb. packs.

CSCO ICE MACHINE CLEANER

Cleans Ice Makers of all types . . . for clear, hard ice. Packaged in 8-oz. poly bags.

SPECIAL ALGAE SOLVEX

Kills algae, sanitizes, sterilizes, and deodorizes. Grains in 10, 25, 50 and 100 lbs. and handy tablets.

Ask Your Wholesaler or Write:

CHEMICAL SOLVENT CO.

3005 N. 16th Street P. O. Box 487 Birmingham, Ala.

What Happened In Memphis

27 Installers Air Conditioned 1,240 Residences During 1956, A Drop from the 1955 Figure

(Continued from Page 1)

contractors and distributors not only for their current figures, but the over-all total of the preceding year. The latter serves as something of a check on the previous year's survey.

Change Figures

One distributor, for example, who for the 1955 survey claimed 325 residential jobs now reports that his 1955 total was only 223. Another firm who last year reported 195 jobs for 1955 now says this should have been 128. If these latest figures are correct, then the 1955 total was actually 169 less than the 1,251 reported last year.

(This reporter is still speculating as to whether these discrepancies are due to (a) faulty memories about 1955 figures, (b) a human tendency to exaggerate, or (c) attempts to "doctor" 1955 sales figures downward so that the reduced 1956 sales don't look so bad.)

In any event, the over-all validity of the survey is hardly affected because the major objectives of learning where residential air conditioning is being installed, type of equipment being installed, and who's installing it are still determined with close accuracy.

17 Contractors, 10 Distributors Listed

As shown in the accompanying tabulation, 17 contractors and 10 distributors are listed individually. It should be emphasized that this tabulation of distributors does not necessarily represent a true picture of the distribution pattern in Memphis. Wherever possible, the data is broken down by contractor rather than distributor. Thus some distributors actually handled more units than shown here, but the latter are included in the contractor tabulation above. And all the sales of one major distributor are broken down by contractor.

It should also be pointed out that most distributors in Memphis also have their own contracting divisions whose residential sales in most instances are lumped with the over-all distributor total.

Most Units Put In Existing Homes

Majority of the 1956 Memphis air conditioning systems were installed in existing homes. There were 676 such jobs, which represent 54.5% of the total. This is a slight gain over 1955 when 51% of the residential systems went into existing homes.

The speculative home builder is still not a dominant factor in the Memphis picture. His 1956 purchases of central air conditioning amounted to 285, down from the 335 reported in 1955.

The buyer or owner of a "new home," however, still remains a good prospect. There were 279 installations in new homes in Memphis during 1956 where the buyer or owner made the decision. The 1955 total in this category was 282.

Year-Round Units Are 60% of Total

A comparison of year-round vs. cooling only installations show that the latter with 748 represented 60% of the total 1956 jobs. There were 492 year-round systems. In 1955 these two categories were about equally divided: 617 year-round and 634 cooling only.

Fact that there were fewer year-round systems (492) than new homes air conditioned (564) in Memphis last year might indicate that the contractor who installed the cooling system was not the same contractor who had put in the heating plant. This, of course, can happen when the buyer of a new home delays a few months in the addition of cooling.

The sharp industry-wide swing to air-cooled equipment is reflected in Memphis. Of the 1,240 residential systems, only 201 were water cooled compared with 1,039 air cooled. Of the latter, 952 were "remote" or "split" systems while 87 were completely self-contained.

Most of the water-cooled systems—195 out of 201—were equipped with cooling towers or evaporative condensers.

While the trend to air-cooled equipment is obvious, one leading contractor believes that installing it "accross the board isn't wise."

He explains: "We engineer all

(Concluded on next page)

AUTO-LITE

...TEMPERATURE INDICATION

Original equipment manufacturers may choose from a complete line of Auto-Lite dial thermometer types, in ranges to meet the requirements of specific applications.

Send for our latest catalog describing the many Auto-Lite thermometer styles and types.

THE ELECTRIC AUTO-LITE COMPANY

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TEMPERATURE INDICATORS & RECORDERS

MARCH CONDENSATE PUMPS

- **COMPACT — FIT INSIDE ANY A.C. OR REFRIGERATION UNIT**
- **FIT EQUIPMENT OTHER PUMPS CANNOT HANDLE**

Specially designed to conquer air lock. Assure automatic and positive priming over long distances and high lifts . . . through patent-applied-for features. Only a fraction of the cost of gravity lines. In-pan or out-of-pan mounting, all inside unit. Thermal protected. Year warranty. Complete line.

FLOAT-O-MATIC MODELS — (left) in-pan or out-pan automatic float control. A-F has vertical lift up to 6 feet, horizontal to 200 feet. B-F, vertical lift up to 9 feet, horizontal to 300 feet.

UNIVERS-L-MOUNT OUT-OF-PAN MODELS—A-S lifts 6 feet, handles 200 feet horizontal runs. B-S lifts 9 feet with runs of 300 feet. Cycle with A.C. controls. Mounts below drip pan.

Also standard in-pan units. Write for data.

MARCH MANUFACTURING CO., INC.

8019 NORTH LAWNDALE
SKOKIE, ILLINOIS

OUTSTANDING PERFORMANCE EXCLUSIVE DESIGN

For more information about products advertised on this page use Information Center, page 38.

Residential Air Conditioning In Memphis In 1956

Contractor	1956 Total Units	–New Homes– Owner	Builder	Existing Homes	Years-Round Systems	Cooling Only	—Air Cooled— Remote	S.C.	Water Cooled	With Tower	Sheet Metal Shop
1	146	26	18	102	47	99	135	7	4	4	No
2	104	2	45	57	47	57	54	....	50	50	Yes
3	90	33	24	33	30	60	80	....	10	10	Yes
4	75	22	23	30	48	27	37	1	37	37	Yes
5	74	46	10	18	57	17	69	....	5	5	Yes
6	45	5	....	40	5	40	40	....	5	5	No
7	30	5	....	25	5	25	29	....	1	1	No
8	30	1	4	25	5	25	28	2	....	....	No
9	20	....	5	15	5	15	20	....	....	....	Yes
10	20	8	4	8	12	8	20	....	....	....	Yes
11	20	2	8	10	10	10	20	....	....	....	Yes
12	20	2	16	2	18	2	12	....	8	6	Yes
13	14	6	3	5	9	5	12	....	2	2	Yes
14	12	10	....	2	10	2	10	....	2	2	No
15	7	2	....	5	....	7	7	....	....	....	No
16	4	....	....	4	....	4	2	....	2	2	No
17	4	1	....	3	1	3	3	....	1	1	Yes
Distributor											
A	282	75	75	132	100	182	215	60	7	7	....
B	100	10	40	50	50	50	66	....	34	30	....
C	75	7	4	64	11	64	40	17	18	18	....
D	15	3	....	12	3	12	12	....	3	3	....
E	14	4	2	8	6	8	14	....	....	....	....
F	12	7	2	3	9	3	12	....	....	....	....
G	10	....	....	10	....	10	10	....	....	....	....
H	10	....	....	10	....	10	....	....	10	10	....
I	6	2	2	2	4	2	4	....	2	2	....
J	1	....	....	1	....	1	1	....	....	....	....
Total	1,240	279	285	676	492	748	952	87	201	195	....

Memphis Survey --

(Concluded from preceding page)

our residential jobs. Now suppose, as has happened, the job calls for 3½ tons. A 3-hp. air-cooled unit simply couldn't handle the load at our design conditions (78° F. indoors at 95° F. outdoors). The customer could install a 5-ton air-cooled unit which would do the job, but this would cost more to install and operate than a 3-hp. water-cooled unit complete with tower, which could handle the load."

He's also quite concerned, he says, about these small 2-hp. air-cooled systems being installed.

Wonders About Small Air-Cooled Jobs

"We had three terrifically hot summers in a row, which largely started the boom in residential air conditioning, but the past three summers have been quite mild. I'm wondering what will happen to these small air-cooled jobs if we get another really hot summer."

Twenty-three different makes of residential cooling equipment are represented in the 1,240 Memphis systems of 1956. Fifteen of these can be classified as the products of "old line" air conditioning and refrigeration manufacturers, which are credited with 850 units, or 68.5% of the total installations.

The eight "furnace" manufacturers picked up 390 jobs between them for 31.5% of the total.

'Old Line Firms' Get Most Jobs

In the 1955 survey, six "furnace" manufacturers were credited with 283 units for 23% of the total while 16 "old line" air conditioning and refrigeration firms combined for a total of 968 jobs or 77% of the total.

(Even if the previously mentioned "discrepancy" in the 1955 figures is allowed for, the above 1955 breakdown would be changed only slightly. "Furnace" makes would be credited with 26%; the old line firms, 74%.)

Obviously, the "furnace" manufacturers gained some ground in the past year, but were still being outsold better than 2 to 1. Although about twice as many "old line" air conditioning and refrigeration manufacturers as "furnace" producers are represented in the 1956 summaries, five well known "old line" firms picked up a combined total of 622 jobs or almost 50%.

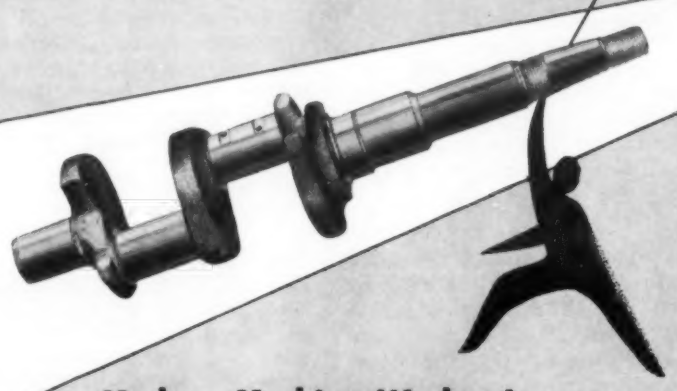
As has been noted in previous Memphis surveys, there is no sharply defined picture as to the type of contractor getting the bulk of the residential air conditioning business here. It would be safe, therefore, to repeat the comment made in the story describing the 1955 survey:

"Those who predicted two or three years ago that the heating and sheet metal contractor would 'walk away' with the residential air conditioning business have yet to be proved right."

SHAFTS by MODERN

Shafts by Modern now power compressors for the leading lines of commercial refrigeration and air conditioning units. For precision SHAFTS, in quantity, consult us. Send blueprints for quotation.

SINCE 1924...

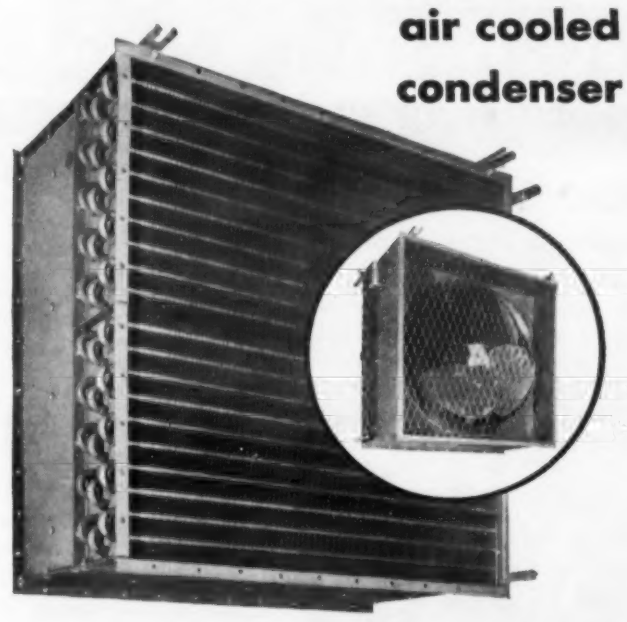


Modern Machine Works, Inc.
Pioneers in Shaft Manufacture
5354 S. KIRKWOOD AVENUE CUDAHY, WISCONSIN

END WATER PROBLEMS WITH LOW-COST HIGH-QUALITY

LARKIN

ZEPHYRCON air cooled condenser



HANDLES UP TO 40 TONS AS EASY AS A BREEZE!

Here's the ideal air cooled condenser for residential and commercial air conditioning installations up to 40 tons. The Larkin Zephyrcon pulls the air over the condensing coils, assuring even air distribution and holding operating noise to a minimum.

The Larkin Zephyrcon is engineered with sufficient condensing capacity to solve your problem, yet it is economical to buy, install, maintain, and operate. See your wholesaler for details and specifications, or write direct to us.

FIVE MODELS WITH OUTSTANDING FEATURES

- 2, 3, 5, 8, and 10-ton units engineered for parallel use
- Famous Larkin cross-fin coil—aluminum fins, copper tubes
- Finished with corrosion-resistant epon-base, chlorinated-rubber enamel
- Permanently lubricated motors operate quietly on resilient adjustable base. Motors are provided with overload protection
- Motor wired to weather-proof external conduit box
- Fan guard is standard equipment
- Zephyrcon is weatherproofed for indoor or outdoor operation
- Slotted hanger bars for ceiling or floor installation

LARKIN COILS INC.

519 Memorial Drive, S. E. • ATLANTA, GEORGIA • MUrray 8-3171

FURNAS ELECTRIC CONTROLS

THE BEST FOR AIR CONDITIONING AND REFRIGERATION

These starters and contactors provide across-the-line control of hermetic and general purpose motors used in the air conditioning and refrigeration industry. They have been specifically designed to satisfy the particular performance requirements of the loads and duty cycles, plus the space and economic requirements set forth by the air conditioning and refrigeration industry.

For more information write for Bulletin 5519.
Furnas Electric Company, 1111 McKee St., Batavia, Illinois.
A24

FURNAS ELECTRIC COMPANY
BATAVIA, ILLINOIS
SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

Selection is easy...
with Warren's new three-tier refrigerated shelves for produce

Warren's Model XP Refrigerated Shelves put all the produce out in easy view... easy reach. Customers can select quickly from the three attractively displayed produce shelves. And this versatile case can be included in the same MULTI-CASE with Refrigerated Shelves for Dairy. Case top is a fourth deck for nonrefrigerated associated items.

75th year Warren Diamond Jubilee Series

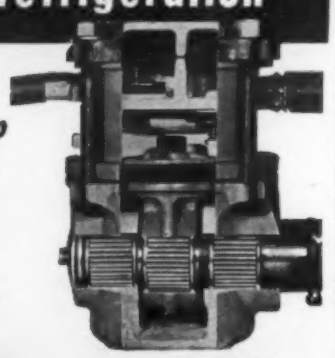
Warren Refrigerators

Expert Div.: P. O. Box 27884, Los Angeles 27, Cal. • P. O. Box 1436, Atlanta 1, Ga.

ACE, the quality line for air conditioning and refrigeration

MODEL 77
Diaphragm Descaling Acid Pump

Descaling compounds can't affect this pump! All parts in contact with compounds are completely acid-resistant. Can be supplied as portable unit with pump and motor mounted on sturdy base and with convenient carrying handles.



Plus a complete line of centrifugal pumps

. . . sized to fit your needs. ¼ H.P. thru 7½ H.P. Easy to install and compactly built. Advanced features include exclusive baked-on lifetime finish to enhance appearance and resist corrosion, John Crane mechanical seal, and all-bronze one-piece impellers. Continuous duty motor.

Manufacturers representatives and distributors' inquiries invited.

ACE PUMP CORPORATION
140 HERNANDO ST. • MEMPHIS, TENN.

Grocers To Divide Business Sessions In A.M., Hold Exhibit In P.M. at Navy Pier Convention June 9 to 13

CHICAGO—The 58th annual convention and food industries exhibition of the National Association of Retail Grocers will be held at Navy Pier here, June 9-13.

After the opening meeting on Sunday afternoon, June 9, the popular "Early Birds Sessions," which have become the hallmark of recent NARGUS conventions, will again open each weekday morning's program, Monday through Thursday, at 8:30 o'clock.

The 58th convention will introduce a new convention format with the presentation of divided business sessions running concurrently from 9:30 a.m. to 11:30 a.m. to provide retailers with a wide selection of valuable topics, it was announced.

The several sessions in meeting rooms at Navy Pier will offer workshops and clinics for retailers who operate stores of all types and sizes. Produce merchandising, meat department management, store location, selection, and financing, as well as stock arrangement and layout, are among the numerous topics scheduled for discussion and demonstration.

A general assembly meeting at 11:30 o'clock each weekday morning will present industry and government speakers on subjects of major business interest, from economics to politics and many others.

A mammoth food industries exhibition will be highlighted by a colorful demonstration of the "Food Store Spectacular," the first country-wide, industry-wide merchandising program to be featured in more than 100,000 independent food stores across the nation Sept. 12 to 21, 1957. The promotion is co-sponsored by NARGUS and *The Saturday Evening Post*.

Again this year, all business meetings will be held in the morning with the exhibit open in the afternoon, except on opening day.

"Retailers will be surrounded with new ideas and up-to-date information about the tremendous progress and advancement of the food distribution industry during business meetings, at the exhibits and demonstrations," according to Mrs. Marie Kiefer, NARGUS secretary-manager and convention director.

Interspersed among the business sessions and exhibit presentations, will be numerous entertainment features, planners announced.

The convention registration fee is $20 per person which includes the entertainment features. Registration for the convention and requests for hotel accommodations should be sent to the headquarters office of National Association of Retail Grocers, 360 N. Michigan Ave., Chicago 1.

Sees Frozen Meat Pathway 'Smoother,' Could Top Other Frozen Item Sales

NEW YORK CITY—Frozen meat will be big business, but must first "get out of the initial growth stage," in the opinion of D. B. Love, general manager of Frosted Meats Div., Armour & Co.

A more optimistic note for the immediate future was sounded by Leonard Berkowitz, general manager, L. B. Darling Co. "It is my belief that this is the year for frozen meats," he said, adding that the pathway for frozen meat is becoming "smoother," and could "within a short time" exceed total dollar volume sales of all other frozen products.

According to a survey taken for Darling in a number of markets, he explained, 82.3% of the homemakers polled had freezer space to put in a weeks' or two weeks' supply of frozen meats.

Donald J. Wallace, advertising and merchandising manager, Excelsior Quick Frosted Meat Products, said frozen meats in the last two years have become a very important part of the frozen food industry. He forecast that within "the very near future," frozen meats will lead the frozen industry in tonnage and dollar volume.

A panel discussion on the subject by officials of five meat packing firms, attended by nearly 100 industry representatives, concluded that frozen meats "require realistic margins, standardized weights, and aggressive promotions" in order to gain high volume. Given these conditions, sale of frozen meats can quickly move into high gear, "perhaps in the very near future."

Wagner Electric Reports '56 'Best Year In History'

ST. LOUIS—Wagner Electric Corp. here reported it "had the best year in our history" in 1956.

For the first time net sales passed the $100 million mark—at $100,744,275. This was 9.2% higher than net sales in 1955 and 3.8% above sales in any previous year, Wagner indicated.

Net income for the firm increased from $4,755,079 in 1955 to $6,544,757 last year. This amounted to 6.5% of sales, whereas it was 5.2% in 1955, it was stated.

Wagner's annual report showed that in its 65th year the firm paid $3,437,426 in dividends to 7,969 stockholders as of the end of the year.

To Offer Pre-Fab Air Curtain Market Door

ST. LOUIS — American Air Curtain Corp. here announced it will soon offer a packaged prefabricated air door unit primarily aimed at market installations.

Ernest Gygax, vice president, said details and price of the prefab units will be disclosed shortly.

All previous air curtain door installations have been custom jobs, and the package unit is designed to cut costs of specialized construction, it was pointed out.

First American curtain in the U. S. was placed in operation in a Dillonvale, Ohio market.

No. 13 in a series on refrigeration

DIAGRAM A

The above diagram represents a common three-toed sloth, a peculiar animal that is only right side up when it is upside down.

When placed on solid ground with its feet down a sloth gets dizzy. It is the only animal that can navigate indefinitely with its navel in bright sunlight. How does it do this? Ans.: the sloth's make-up includes a certain component part, a librascopic stabilizer—no doubt.

We here at Recold Corporation produce a line of refrigeration and air conditioning equipment, one item being our **Dri-Fan Evaporative Condenser.** It's far from being a sloth and we'll back that with a money-back guarantee.

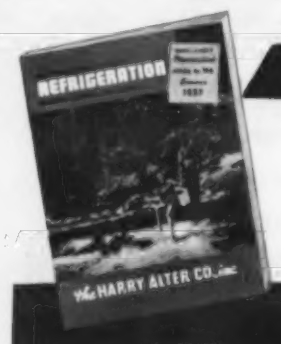
But—our **Dri-Fan Evaporative Condenser** does incorporate one very special component part that is unique, fully as unique as that thing that enables a sloth to remain upside down. **Our** important component part is a patented bleed funnel that functions in a most unique way. Every refrigeration engineer (and quite a few other people, too) know that a major problem in refrigeration is the control of corrosion and scale deposit traceable to mineral elements in H 2-O. The old approach to the problem called for bleed tubes (which are better than nothing but not much better) and for expensive valves that work fine until they clog up, which is any minute now.

Our simple but effective (and patented) bleed funnel takes away a scientifically precise amount of moisture thus controlling corrosion and scaling. It is exclusive with our **Dri-Fan Evaporative Condensers** which make for increased efficiency in refrigeration. For full technical details write today:

Celebrating our 25th Year

Recold CORPORATION

7250 E. Slauson Ave., L. A. 22, California
Formerly — Refrigeration Engineering, Inc.
Phone: RAymond 3-3281



REFRIGERATION is our SPECIALTY
Air Conditioning and Electric Motors, Too!

OVER 10,000 ITEMS . . .
most complete list in the world... appear in the Harry Alter DEPENDABOOK No. 166 Summer, 1957 with illustrations, descriptions, prices. **SAVE MONEY,** time and effort by ordering from this compact, easy-to-read, up-to-date catalog.

PARTS and Supplies

Write on your letterhead for the DEPENDABOOK

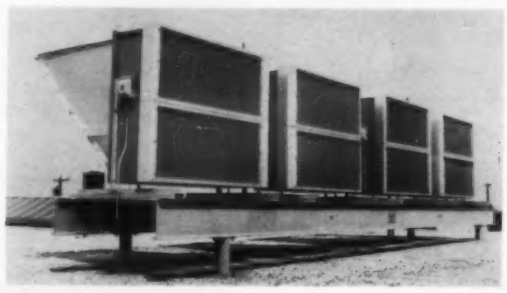
WHOLESALE ONLY

The HARRY ALTER CO., Inc., 1717 S. Wabash Ave., Dept. A, Chicago 16, Ill.
or visit branches: 134 Lafayette Street, New York 13, N. Y. · 122 Parkhouse Street, Dallas 7, Texas · Bldg. B, Unit 8, 690 Stewart Ave., S.W., Atlanta 10, Ga.

For more information about products advertised on this page use Information Center, page 38.

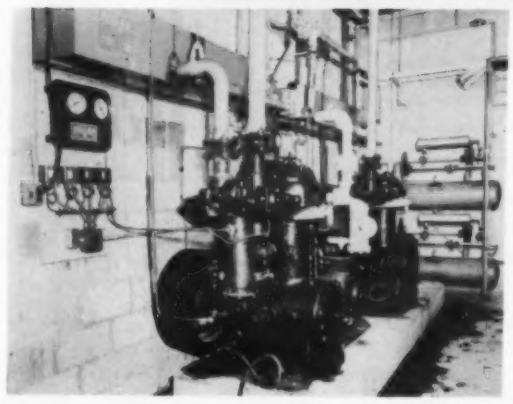
Industrial Applications

Refrigeration System Holds Ice Cream In Cold Storage Center at -20°



TWO Kramer model BD-200 "Unicons" in the Good Humor Lindenhurst, L. I. distribution center, one connected to each compressor, provide sufficient condensing capacity without use of water. The girder on which they are mounted was chosen because of the span between supports.

FIVE of the six Kramer TV-520 evaporator coils which maintain -20° temperature in the low temperature warehouse. Large racks contain ice cream specialties as received from trailers. Small enclosed racks are ready for loading aboard route trucks.



TWO Frick 7¾ x 5 heavy duty industrial type Refrigerant-12 compressors maintain -20° freezer temperature in the center. Immediately above the compressors are two Kramer "L Thermobanks" which store heat for use in providing rapid defrosting of evaporator coils in freezer room. They also prevent liquid refrigerant from returning to the compressor during the defrost operation.

LINDENHURST, L. I., N. Y. —A refrigeration system that maintains a temperature of -20° F. in the huge cold storage room at Good Humor Corp.'s distribution center here helps the firm meet the summertime demand for ice cream bars in the populous eastern Long Island area.

The installation safeguards thousands of dollars worth of stored bars.

The Lindenhurst distribution center is the "nerve center" of an extensive operation employing more than 100 refrigerated trucks to bring "Good Humors" direct to the consumer.

Hallam Engineering & Construction Corp. of Brooklyn and Hempstead, N. Y. specified Kramer "Thermobank" automatic re-evaporative hot gas defrost low temperature cooling units and Kramer "Unicon" air-cooled condensers for use in the Lindenhurst plant.

The center's big cold storage room is equipped with six TV-520 Thermobank evaporators on a by-pass "L" bank hookup. The Thermobank employs the Kramer automatic re-evaporative hot gas defrost system "which provides completely automatic rapid defrosting operations and protects the compressor from liquid refrigerant slugs during defrost," it was pointed out.

The Thermobank evaporators are operating with two Frick heavy-duty industrial type Refrigerant-12 single stage compressors, each of which operates three evaporative units. The compressors are provided with refrigerant cooled heads and are electrically interlocked for sequence starting.

The condensing operation is handled by two BD-3000 Unicon air-cooled condensers which are mounted on the roof of the building. They are equipped with sequenced pressure switches to maintain proper head pressures throughout the year. The controls permit either fully automatic or hand operation, depending upon plant requirements.

In building the cold storage warehouse, the Hallam Corp. spared no effort to make the installation as dependable as possible, it was noted. Ventilating tile ducts are provided in the floor to prevent heaving, and the ceiling insulation is secured by a galvanized channel ceiling for maximum rigidity.

The packaged Good Humor product arrives at the distribution center in heavy refrigerated tractor-trailers and is then transferred to the storage room which is maintained at a temperature of -20° F. In the freezer, the shipment is broken down into retail quantities and placed on checkout trucks for transfer to the route trucks.

Ranco Buys 25% of Irish Processing Firm

COLUMBUS, Ohio — Ranco Inc. has purchased a 25% interest in Bessbrook Products, Ltd., of Bessbrook, Northern Ireland, A. M. Hoover, president, announced.

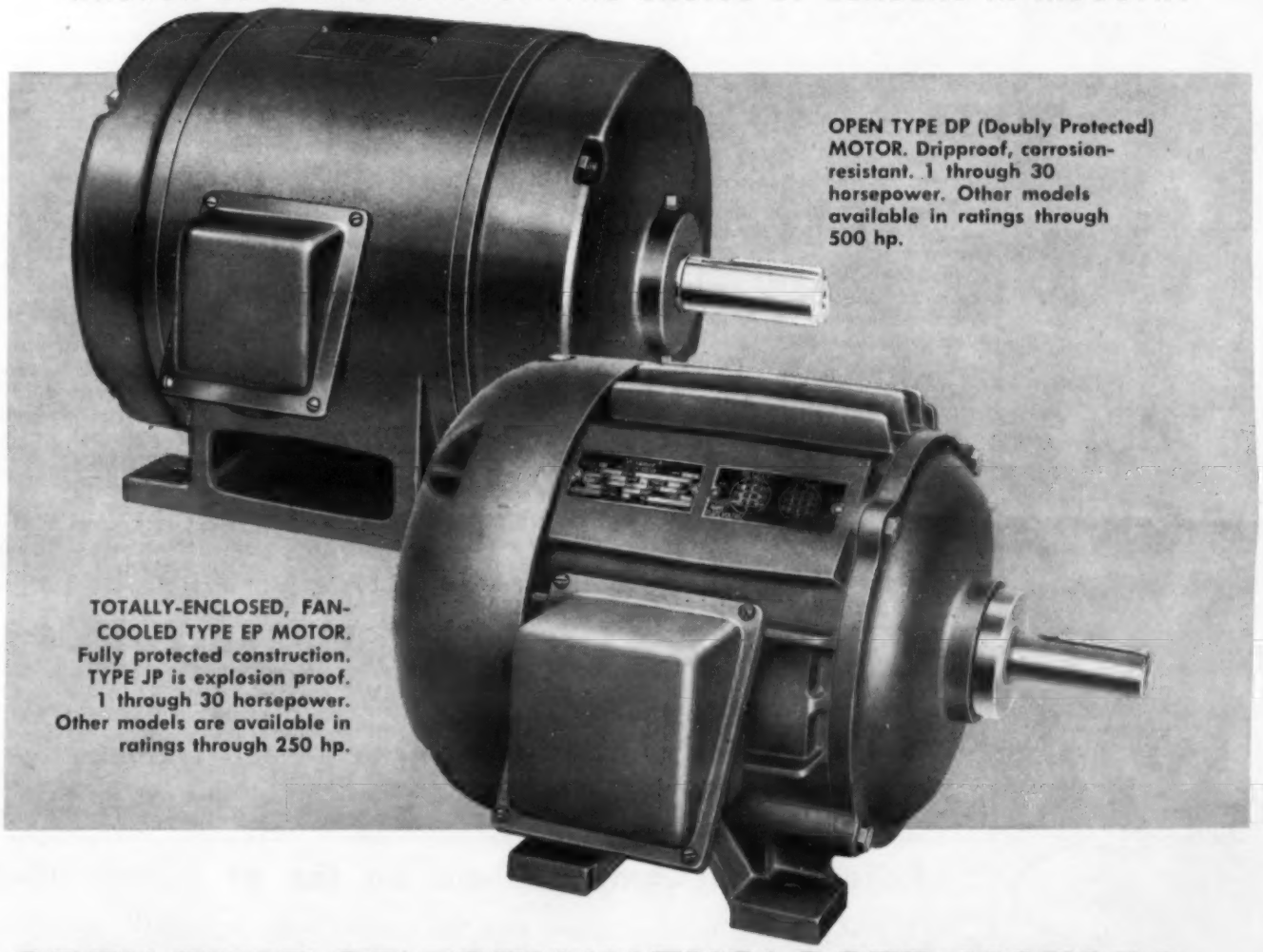
The new company, which has been formed jointly with Unidare, Ltd., Pye (Ireland) Ltd., and Corran Works Ltd., will process materials used by Ranco's British subsidiary, Ranco Ltd., "providing better assurance of supplies." Production will start in about a year.

Norman Best, general manager of Ranco Ltd., will be a director.

Looking for a Business to Buy . . . ?

Check the Business Opportunities Section in the classified advertising columns.

WAGNER ELECTRIC MOTORS...THE CHOICE OF LEADERS IN INDUSTRY


OPEN TYPE DP (Doubly Protected) MOTOR. Dripproof, corrosion-resistant. 1 through 30 horsepower. Other models available in ratings through 500 hp.
TOTALLY-ENCLOSED, FAN-COOLED TYPE EP MOTOR. Fully protected construction. TYPE JP is explosion proof. 1 through 30 horsepower. Other models are available in ratings through 250 hp.

OPEN TYPE OR TOTALLY ENCLOSED MOTORS...

Wagner offers MORE for your motor dollar!

- **MORE POWER IN LESS SPACE** . . . These motors are built in NEMA frame sizes 182 through 326 U. They pack more power into less space for easier handling and stocking—require less space for installations.
- **CORROSION-RESISTANT FRAMES** . . . Both types are built with rugged, corrosion-resistant cast iron frames. Motor feet are cast as an integral part of the frame for maximum strength and rigidity.
- **THE TYPE OF PROTECTION YOU NEED** . . . Type DP motors have completely dripproof—virtually splash-proof enclosures; while type EP is totally enclosed, fan-cooled for complete protection; and type JP adds explosion proof features.
- **COOLER OPERATION** . . . Special baffles direct a cooling flow of air through the DP motor. Types EP and JP are fan-cooled and have ribbed frames to increase the surface area for more efficient cooling.
- **LONGER BEARING LIFE** . . . These motors can be re-greased when desired to prolong bearing life. Fresh grease can be added—old grease removed through openings provided in the bearing housing.
- **WAGNER DEPENDABILITY** . . . These two motors have the same high Wagner quality, will give the same long life performance, that have made Wagner Motors a *known* value for sixty-five years.
- Let a Wagner field engineer, expert on motor applications, show you how these motors can be applied to your needs. Call the nearest of our 32 branch offices, or write us. Bulletins MU-202 and MU-203 give complete information on these Wagner Motors. Write for your file copies today.

H57-4

Wagner Electric Corporation
SERVING INDUSTRY SINCE 1891

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

Wagner Electric Corporation
6441 Plymouth Ave., St. Louis 14, Mo., U.S.A.

ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES • AUTOMOTIVE BRAKE SYSTEMS—AIR AND HYDRAULIC

For more information about products advertised on this page use Information Center, page 38.

Men on the Move . . .

Wolverine Tube, Div. of Calumet & Hecla, Inc.—SAM E. ROBB has assumed new responsibilities as advertising supervisor. He was formerly sales representative in the New York City area.

L.O.F. Glass Fibers Co.—ROLAND A. WARNS has been named industrial engineer. He has been a management trainee for the last six months and was previously associated with Surface Combustion Corp.

Western Brass Mills Div., Olin Mathieson Chemical Corp.—E. W. RUHE has been appointed "Roll-Bond" manager and will be responsible for production and engineering functions. He will also assist in establishing Roll-Bond sales policy from his office in division headquarters, East Alton, Ill. He has been Roll-Bond production manager.

Water Service Laboratories, Inc. (New York City)—JOHN J. CONSTANTINO has joined the chemical department. He was formerly associated with Patuxent Filtration plant of Washington Suburban Sanitary Commission at Laurel, Md.

Norge Div., Borg-Warner Corp.—GEORGE P. HINKLEY has been appointed district manager in charge of selling Norge gas and electric home appliances to distributors in Massachusetts, Rhode Island, Maine, Vermont, and New Hampshire. He succeeds JOHN A. CURLEY, recently appointed field merchandiser. Hinkley was previously field sales training manager for the firm.

Canadian Ice Machine Co., Ltd.—R. H. DYSON was promoted to vice president-general manager, C. H. BOWER becomes vice president-public relations, and W. L. B. WATTS becomes treasurer and comptroller. Watts is also treasurer of Shipley Co. of Canada, Ltd.

Metals & Controls Corp.—JOHN F. WILSON, general sales manager, Cleveland Welding Div., American Machine & Foundry Co., has been appointed general manager of marketing. He will be in charge of sales and marketing for the General Plate and Spencer divisions and in charge of engineering for Spencer.

Westinghouse Electric Corp.—RICHARD S. SHEETZ has been named manager of the company's water cooler and dehumidifier department here. He was assistant to the manager of major appliance division in Mansfield, Ohio.

Unitary Equipment Div., Carrier Corp.—Promotion of three executives has been announced.

RUSSELL KNOWLES, formerly materials manager, has been upped to distribution services manager.

FLOYD A. FLESHER, formerly general superintendent of the manufacturing department, succeeds Knowles.

THORSTON NORDQUIST, formerly assistant to Flesher, has been named general superintendent.

Kelvinator Div., American Motors Corp.—JAMES R. FLEMING, formerly a sales engineer with Betz Div., Bohn Aluminum & Brass Corp., has been named sales engineer for the contract sales department and assigned to cover sections of Ohio, Indiana, Illinois, Wisconsin, Minnesota, and Iowa.

SAM B. WILLIAMS has been promoted to manager of the Dallas branch of Refrigeration Discount Corp., sales financing subsidiary of Kelvinator. He takes over the branch following the resignation of C. C. Maupin. He had been assistant manager.

J. B. BANKHEAD, a Dallas field representative, has been appointed to succeed Williams as assistant branch manager.

DUDLEY S. DEAN, JR., formerly assistant manager, has been promoted to branch manager of ReDisCo in St. Louis. He succeeds D. W. Davies, Jr., resigned.

ROBERT V. MILLER, a ReDisCo field representative in the St. Louis branch, has been named assistant manager there.

American-Standard, Air Conditioning Div.—FRANK HICKEY has been named district representative in the Boston territory and TED BUJEWSKI district representative in the Detroit area, succeeding Hickey. Bujewski has been cooling sales engineering covering Chicago, Omaha, Neb., Minnesota, and Wisconsin-Illinois prior to this.

Revco, Inc.—HOWARD TENNISWOOD, cabinet engineer, has been named to a new position in charge of long-range development. He is succeeded by PAUL EBERHARDT, formerly cabinet design engineer on RCA Whirlpool products at Whirlpool-Seeger Corp.

Worthington (Canada) 1955 Ltd.—Appointment of H. D. ALLAN as general sales manager has been announced. He will direct sales of equipment through Montreal, Toronto, Calgary, and Vancouver sales offices.

American Blower Div. of American-Standard—Appointment of RICHARD G. WALSH as manager of the new branch sales engineering office in Green Bay, Wis., has been announced. He will be responsible for providing assistance to users of air conditioning, air handling, and heating equipment, fluid drive power transmission units, and refrigerating machines in that area. He has been a member of the Mineapolis office sales engineering staff.

Airtemp Div., Chrysler Corp.—E. W. MATSON has been named supervisor, Planning-Airtemp Construction Div. He will coordinate procurement, order handling, production scheduling, and shipment scheduling for ACD products. He previously was in the product order section as supervisor, Product Distribution.

MARSHALL BEAN has been promoted in the order department to succeed Matson.

Aeroquip Corp.—Appointment of VICTOR F. KENT as assistant advertising manager in charge of sales promotion has been announced. He will direct the firm's direct mail advertising, shows, slide films, motion pictures, and distributor cooperative advertising, in addition to development and production of catalogs and other literature. He will also be responsible for Aeroquip (Canada) Ltd. advertising. He joined the company last year.

Armstrong Cork Co.—JOHN J. ROPER, sales representative, has been named assistant district manager of the Insulation Div.'s Boston district office.

R. L. COLLISTER, assistant manager of equipment insulation sales, has been named to succeed L. E. COVER as manager upon the latter's retirement.

Philco Corp.—JAMES M. HUFNAGEL has resigned as manager of home laundry sales, Appliance Div. He formerly was manager of Philco-Bendix sales.

Deming Co.—Appointment of GLENN L. DAVIS as chief engineer, formerly assistant to BERNARD SAMELSON, who retired, has been announced. He will be succeeded by EUGENE T. BROOKS. LOUIS C. OSPECK, an engineer, was promoted to chief design engineer.

Lewyt Corp.—WALTER J. DAILY, vice president-sales and merchandising, becomes assistant to the president on a part-time basis, preparatory to retirement. He remains a vice president. Succeeding him as vice president-vacuum cleaner sales and merchandising will be HENRY DORFF, advertising manager. He will also continue to handle advertising.

Johnson Service Co.—CLARENCE A. BICKEL, president of Robert W. Baird & Co., Inc., investment firm, has been elected to the board of directors succeeding the late CARL F. JOHNSON.

Research Products Corp.—Appointment of DOUG RIPPE as district salesman for southern Texas, Louisiana, and Mississippi has been announced. He formerly was in the home office sales department.

Farr Co.—Five personnel additions and changes have been announced:

FRED RICHARDSON has been promoted to southern division sales manager with headquarters in New Orleans. He has been a field sales engineer.

KEN DEBAUN, formerly a sales engineer, has been upped to eastern division sales manager with headquarters in New York City.

KEN BAKER, sales engineer for Dust Control Div. is now in charge of the Washington, D. C. office.

ANDREW GOURLEY, previously with Owens-Corning Fiberglas Corp., has been named western division sales manager with headquarters in Los Angeles.

E. L. WILLIAMS, who has been advertising manager for Houston Tool Co., was appointed advertising and sales promotion manager of the firm.

Researchers Compile Data on Ice at Minus 30-40°

MONTREAL, Que., Can.—Researchers at McGill university here have "brought the arctic to the university" to do work on a wide range of ice problems in a new low temperature laboratory.

Working in temperatures 30-40° below zero in the basement of the physics building, the scientists examine ice crystals through high-powered microscopes, turn "ice beams" on the lathes, and cut experimental ice shapes with bandsaws to learn more about ice formations.

They are compiling data on mechanical, electrical, thermal, optical, and acoustic properties of ice for a variety of possible applications, it was explained. This basic research is rounded out by field work in ice-breakers and at the Shippegan, New Brunswick field headquarters for the Ice Research project.

Results of their work could range from development of "plows" for icebreakers, new methods of snow removal from streets, a method of thawing the ice of the St. Lawrence river to prolong navigation, or making airports safer for landing high-speed jets during the winter.

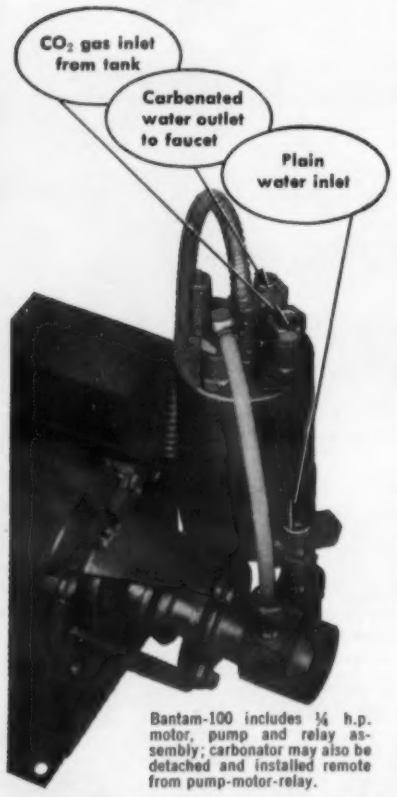
Don't pass up Carbonator Business!

See how easy it is to install the

Temprite Bantam-100

Self-contained and completely automatic, the Bantam-100 is very easy to install. Weighs only 28 lbs.

You make simple connections to plain water inlet . . . to CO_2 gas . . . to soda water outlet . . . 110 volt power supply . . . and it's ready to go!



Bantam-100 includes ¼ h.p. motor, pump and relay assembly; carbonator may also be detached and installed remote from pump-motor-relay.

TEMPRITE PRODUCTS CORPORATION
Box 72-A, East Maple Road
Birmingham, Michigan

Send me details on the Bantam-100.

Name_____

Address_____

City_____ State_____

Beverage-Air

ICE CREAM MIX and BULK COOLERS

. . . they sell while they protect

Capacity and durability combined with positive, low cost cooling. Widest range of remote or self-contained models. Reinforced stainless steel tops — plain or with various pump and fruit jar arrangements. Hold 5 and 10 gal. cans with no lost space. Refrigerated "Utility" compartment for extras.

Write for literature and prices FREE.

Illustrates one Pump and Jar arrangement available on MS48-S

Model MS62-S

THE PUNXSUTAWNEY COMPANY
705 THIRD ST. - PUNXSUTAWNEY, PA.

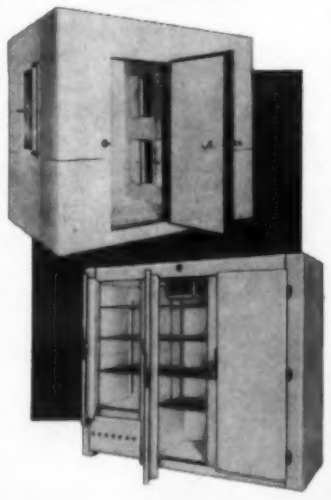
Gloekler

A FAMOUS NAME IN COMMERCIAL REFRIGERATION FOR OVER 50 YEARS!

As a pioneer designer and builder of commercial refrigerators, with more than 50 years of experience, Gloekler offers these important advantages:

1. Your customers get the finest construction materials and design plus the all-important benefits the industry's most advanced skills and facilities can offer.
2. Too, as a Gloekler dealer you are protected on every transaction in your area, and get conscientious factory cooperation in maintaining good customer relations.

WALK-IN & REACH-IN
Standard and Custom Designs for Every Need!



COMPETITIVELY PRICED BACKED BY WRITTEN WARRANTY

Gloekler
P.O. Box 1154-AC
ERIE, PA.

For more information about products advertised on this page use Information Center, page 38.

BDSA ADMINISTRATOR Horace B. McCoy opens the Government-Industry symposium as Secretary of Commerce Sinclair Weeks (seated, left), Cloud Wampler, board chairman of Carrier Corp., Frederick H. Mueller, assistant secretary of Commerce for Domestic Affairs await their turn at the microphone.

AT SPEAKER'S luncheon ARI President M. M. Lawler (second from left) chats with Floyd S. Bryant, assistant secretary of Defense for Properties and Installations, (left), Frederick H. Mueller, and Horace B. McCoy.

Govt.-Industry Symposium --

(Concluded from Page 1, Col. 5)

government might justify air conditioning today as a deciding factor in keeping skilled employes in the face of recruiting by private industry.

Admittedly of a somewhat general nature, this first government-industry symposium on air conditioning will likely be followed by others devoted to more specific problems, it was indicated.

'Air Conditioning Has Great Present, Greater Future'

In opening the symposium, Secretary of Commerce Sinclair Weeks said he was "a great believer in your industry," and that "air conditioning has a great present and a greater future. The time is coming," he added, "when it will be as necessary to cool a house in summer as to heat it in the winter."

And Cloud Wampler, Carrier Corp.'s board chairman, declared that "those who compete for manpower or consumer dollars will do so at an increasing disadvantage without air conditioning.

"Having spent a considerable part of my life in the financial world, I am acutely aware of the economic motivation behind a decision to install a central air conditioning system," he added. "I know that the decision is not made primarily because an air conditioned environment is pleasant. No chief executive officer could justify the expenditure on that basis alone. His decision must be predicated on a dollars and cents payoff.

"As a direct result of air conditioning a structure," Wampler explained, "the economic returns come in the form of lower labor turn-over, less expensive recruitment, fewer employe errors, less time lost, and a higher level of output. These represent the payoff," he emphasized.

Somewhat similar views were expressed by John E. Haines, vice president, Minneapolis-Honeywell Regulator Co., and Roger W. Fulling of E. I. du Pont de Nemours & Co., Inc.

Data showing that complete air conditioning systems in hospitals, industrial, and office buildings can be owned and operated for less than 2% of the total cost was cited by Haines, who also pointed out that only a slight increase in employe efficiency would be needed to justify the cost of air conditioning on that score alone.

The slight difference in cost between a "complete and flexible" system and a "less than complete system" was also mentioned by Haines as being considerably less than 1%.

Studies Show Advantages In Terms of Employe Morale, Health

Studies being conducted by du Pont already indicate that "advantages in terms of employes' health and morale may well become a big plus value of air conditioning with refrigeration," Fulling revealed.

Spot cooling, ventilated suits, and air conditioned rest rooms have distinct possibilities for certain industrial applications, Fulling also stated.

Presenting a government viewpoint, Floyd S. Bryant, assistant secretary of defense (properties and installations) explained that "the purpose of climate control in the Department of Defense is solely to improve the effectiveness of the total defense effort.

Climate control will not increase our number of customers or the number of those who seek our services. I might add also that we cannot take a tax credit for capital improvements nor can we deduct operating expenses," Bryant said.

"The use of climate control in areas involving equipment, processing, or other special functions is based on established engineering and other known facts. We have seen rather firm evidence, too, that climate and humidity control may increase employe efficiency in clerical duties and in similar jobs with a measurable output . . . but . . . we have not yet found a way to prove that climate control enhances brain power," he said.

"Does the executive, the engineer, or the scientist think better when the climate is more comfortable? If so, how much better? If we had answers to these questions, the use of climate control might be reduced to simple economics," Bryant suggested.

Budgeting of $44,850,000 for air conditioning in the fiscal year of 1958 was revealed at the symposium by F. Moran McConihe, commissioner of public buildings for General Services Administration, who said that this branch of the government has a long-range program for "some 375,000 tons of air conditioning to be installed at a cost of $328,000,000."

Originally figured as a seven-year program, this will probably have to be extended over a longer period, McConihe said.

Basic Conditioning 'Problem' Summarized

A good summary of the basic air conditioning "problem" facing government agencies was outlined by Fred S. Poorman, deputy commissioner, Public Buildings Service:

"1. The development of well documented air conditioning policy together with a program of essential requirements which will prove acceptable to budget officials and Congressional committees. (Without this no Federal agency is going to get very far with its air conditioning program);

"2. Optimum correlation of policies, practices, and criteria among the government agencies and the translation of these criteria into suitable designs largely through the use of private engineering organizations;

"3. Industry's assistance in standardization, and

"4. Provision for suitable adequately trained operating and maintenance personnel."

Commenting that "while it is true that the government is normally slow to reach full acceptance of innovations that require departure from traditional concepts, particularly where increased costs are involved," Poorman declared that "the full impact of air conditioning as a necessity in the performance of both our civilian and military missions has placed us—and I am referring to all government agencies concerned with air conditioning—in a position of having update our policies and procedures applicable to cooling."

The symposium also heard from a large private user of air conditioning—Prudential Insurance Co. of America—whose vice president, J. G. Jewett, disclosed that 1,100 of the company's 1,500-odd offices have been air conditioned thus far in a program begun in 1953.

No proof that air conditioning actually increases employe efficiency was offered by Jewett, but he did point out that workers in one Prudential regional headquarters office "don't go home so early now although they still leave their desks at the same time as ever."

Other speakers on the program included M. M. Lawler, vice president of Worthington Corp. and president of Air-Conditioning & Refrigeration Institute; Glenn Stahl, director of programs for U. S. Civil Service Commission; Leon Chatelain, Jr., president, American Institute of Architects; Charles S. Leopold, consulting engineer; C. E. Sigety, deputy commissioner, Federal Housing Administration; and Richard P. Gaulin, hospital mechanical engineer, Department of Health, Education, and Welfare.

Windup session of the two-day symposium was a panel session chairmanned by Wm. T. Smith, chief of the refrigeration and air conditioning section, Headquarters, U. S. Air Force. Panelists were James Morris, General Services Administration; George A. Grimm, Department of Defense; Cecil Boling, president, Dunham-Bush, Inc.; and R. K. Serfass, vice president, York Div., Borg-Warner Corp.

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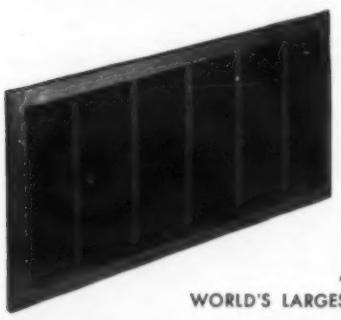

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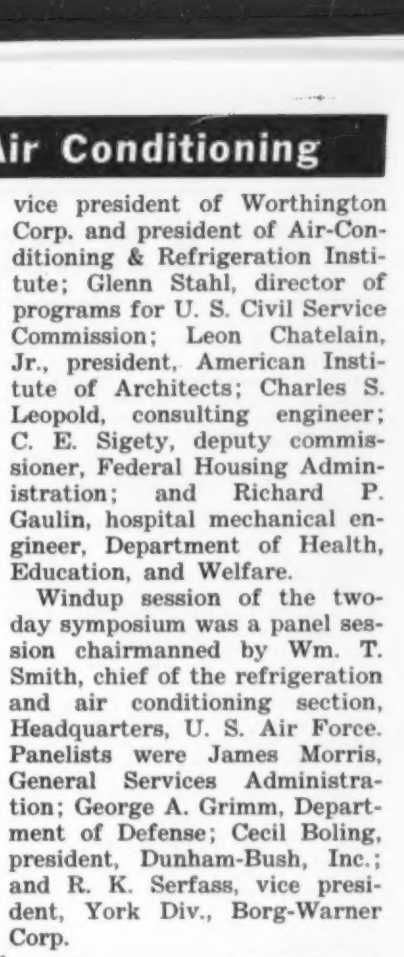

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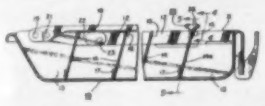
PATENTS

Week of Dec. 25 (Concluded)

2,775,102. FREEZING DEVICE. Edward C. Simmons, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application June 15, 1955, Serial No. 515,613. 1 Claim. (Cl. 62—106.5.)



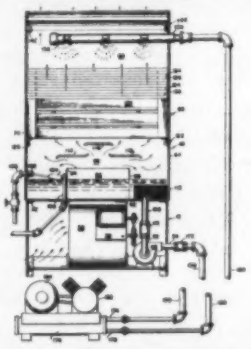
In combination, a tray having a unitary grid structure removably disposed therein, said grid structure including a longitudinal wall formed of two superimposed members disposed in the same plane with one another and a plurality of wall members extending transversely thereacross in spaced apart relation dividing the interior of said tray into compartments in which water is to be frozen into ice blocks, said transverse grid wall members being normally inclined with respect to the vertical, means for interlocking said transverse wall members to said longitudinal wall for tilting movement relative thereto, said means including spaced apart upwardly opening exposed notche sin the uppermost member of said longitudinal wall each receiving a portion of one of said transverse wall members, a single lever pivotally mounted upon one end of said grid structure for moving said uppermost member of said longitudinal wall lengthwise relative to the lowermost of said superimposed members thereof to elevate said one end of the grid and ice blocks adhering therto with respect to said tray, a side of said upwardly opening notches normally being spaced from said transverse wall members and adapted, when said uppermost member is so moved relative to said lowermost member, to engage and tilt said transverse wall members toward the vertical for releasing ice blocks from the grid structure, means at the top of one of said grid wall members having a portion projecting laterally out of the inclined plane thereof horizontally over said side of the notch at the end of said grid structure opposite its said one end, and said horizontally projecting portion of said means being wider than the thickness of said one grid wall member whereby a substantially flat smooth hold-down pad is provided at the end of said grid structure opposite the lever end thereof.

2,775,187. AIR CIRCULATING DOOR FOR REFRIGERATOR. Cloise M. McClurkin, Norfolk, Va. Application Feb. 18, 1954, Serial No. 411,080. 1 Claim. (Cl. 98—36.)

A temperature barrier for use in an opening between two spaces at different temperatures comprising a compound member forming a pair of air ducts of equal size arranged about the periphery of said opening, said compound member including a curved front wall, a substantially straight back wall, an upstanding rib on said back wall, said rib extending into contact with said front wall and dividing said compound member into said pair of ducts, longitudinal extending rows of perforations in said pair of ducts in said curved front wall thereof with said perforations in one of said pair of ducts extending angularly with respect to the perforations in the other of said pair of ducts to form a pair of series of diverging nozzles, air pumps in said spaces, each of said pumps delivering air to the duct adjacent to the space containing the respective pump from the space in which the pump is contained whereby a pair of slightly diverging air curtains of differing temperatures will be formed across said opening, said curtains diverging to substantially eliminate mixing of the air of the curetains.

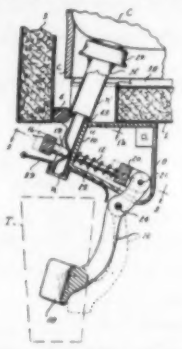
2,775,310. COOLING TOWER. Jack P. Shelton, Memphis, Tenn. Application June 1, 1953, Serial No. 358,688. 8 Claims. (Cl. 183—26.)

1. A cooling tower comprising a lower section, a blower including means forming a discharge outlet therefor, an upper section supported on said lower section, means forming a collar in said upper section, said collar surrounding said discharge outlet, a vibration dampening gasket interposed and supported between said collar and said discharge outlet, said collar being open at its upper end, said upper section having a bottom and sides upstanding therefrom forming together with said collar a water reservior, a removable panel extending substantially vertically across said upper section inwardly of at least one of said sides and cooperating with the other of said sides to form an enclosure for baffles and fluid spray nozzles and dividing said reservoir, when said reservoir is filled with fluid to a normal level, into a main reservoir, and a fluid level control reservoir in communication therewith, fluid level control means mounted in the last named reservoir, said panel having



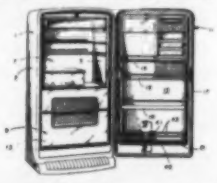
portions projecting outwardly at an angle thereto adjacent the perimeter thereof received within means forming a recess connected with the other of said sides and opening outwardly of said enclosure, baffles mounted in said enclosure above said collar for directing the flow of air delivered by said blower downwardly into said reservoir, spaced filler elements extending across said enclosure above said baffles and providing passageways for air delivered by said blower, fluid spray nozzles mounted above said filler elements, fluid eliminators mounted above said spray nozzles and providing passageways for the exit of air from said enclosure, and a pump for supplying liquid from at least one of said reservoirs to said spray nozzles.

2,775,374. FLUID MILK DISPENSER. William J. Tamminga, Goshen, N. Y., assignor to Monitor Process Corp., Jersey City, N. J., a corporation of New Jersey. Application Oct. 25, 1954, Serial No. 464,464. 23 Claims. (Cl. 222—185.)



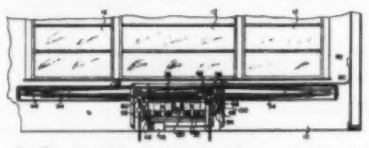
1. A milk dispenser comprising: an open-front cabinet having a floor provided in its front edge with a niche, and an open-front channel extending downwardly below the inche whereby a flexible conduit may be passed from the interior of the cabinet downwardly through the niche and through the channel and seat within said channel, in combination with a conduit collopsing member forwardly of the channel and operable against the conduit in the direction of the forwardly facing front surface of the channel to collapse the conduit against the flow of milk therethrough, and means for moving the conduit collapsing member into and out of engagement with the conduit.

2,775,430. BEVERAGE CONDITIONER. Oscar E. Norberg, Cincinnati, Ohio, assignor to Avco Mfg. Corp., Cincinnati, Ohio, a corporation of Delaware. Application March 30, 1955, Serial No. 497,904. 3 Claims. (Cl. 257—3.)



1. In combination, a refrigerant cabinet, a main refrigerated food storage compartment within said cabinet, an evaporator within the lower portion of said compartment, an access door for said compartment, said door having an outer shell, an inner panel of said door spaced from said shell, insulation between said shell and said panel, said panel having a food storage area in open communication with the lower portion of said refrigerated compartment and located adjacent said evaporator, an electrical resistance heating means in thermal contact with said panel contiguous said food storage area, a thermostatic switch in electrical connection with and controlling the operation of said heating means, said switch mounted on a heat-conducting bracket, said bracket being in thermal contact with said panel adjacent said food storage area whereby said thermostat is responsive only to the temperature of said food storage area, said switch having means for varying its response temperature, said last-named means being adjusted by an extension shaft, said panel having a hole therein adjacent said switch, said extension shaft extending through said hole, and a control knob on said shaft.

2,775,432. APPARATUS FOR AIR CONDITIONING. John W. McElgin, Philadelphia, Pa., assignor to John J. Nesbitt, Inc., Philadelphia, Pa., a corporation of Pennsylvania. Application July 23, 1951, Serial No. 238,089. 4 Claims. (Cl. 257—137.)

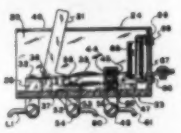


1. In combination, a blower-type air conditioning unit adapted for positioning along a wall of a room, said unit comprising a casing having top, bottom, front and end walls, an air inlet adjacent the bottom of said front wall and air outlet means in said top wall and a first heating element therebetween and a blower to blow air from said inlet to said outlet, an elongated convector unit longer than said blower-type unit casing extending laterally outwardly from one of said end walls of the blower-type unit casing and positioned on the face of the wall, said convector unit comprising a housing with a smaller cross-sectional area than said blower-type unit casing with the bottom face spaced above the floor of the room and having openings in the top and bottom faces thereof, a second heating element comprising a closed loop with the upper reach thereof positioned between said first heating element and said air outlet with a portion of said loop extending through said one of said end walls of said casing into said convector unit and spaced from the interior of said convector housing, and common supply and common discharge conduits in said blower-type unit casing for circulating a heating medium to both of said heating elements.

2,775,433. FINNED TUBE SPACING SUPPORTS. William F. Matheny, Tulsa, Okla. Application Aug. 31, 1953, Serial No. 377,388. 2 Claims. (Cl. 257—262.16.)

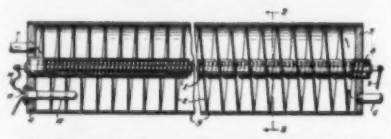
1. In a finned tube for heat exchangers, including a tube portion having a series of radial fins, a radial spacing support forming device comprising a band of flexible metal encircling a portion of said tube and engaging the peripheral edges of a group of adjacent fins, a central annular channel extending around said band, spaced radially from the peripheral edges of said fins, the meeting edges of said band being interconnected by overlapping, transverse flanges bent upon one another, and an opening through the web of said channel to facilitate the flowing of molten metal within the band and between said fins, to provide when hardened, a mass of metal extending radially from the tube to the inner face of said web.

2,775,667. CONTROL APPARATUS. Frederick A. Greenawalt, Columbus, Ohio, assignor to Ranco Inc., Columbus, Ohio, a corporation of Ohio. Application July 21, 1953, Serial No. 369,427. 4 Claims. (Cl. 200—116.)



1. A control apparatus comprising in combination, an electrical switch member movable in opposite directions between limits, means to yieldingly urge said member in said opposite directions, electrical contact means actuated by said member when the latter is moved to its limits of movement, latch means engaged by said member during said movements in opposite directions to interrupt movement of said member from either of said limits to the other by the first mentioned means, means to actuate said latch to disengage and release said member for movement by the first mentioned means, a second switch member disposed between the first mentioned switch member and one of said contact means whereby said second switch member cooperates with the first mentioned member and the last mentioned contact means to establish an electrical circuit through said second mentioned switch member, and means to adjust the position of said second switch member relative to the first mentioned member.

2,775,683. HEAT EXCHANGERS FOR VAPORIZING LIQUID REFRIGERANT. Herman W. Kleist, Hollywood, Ill., assignor to Dole Refrigerating Co., Chicago, Ill., a corporation of Illinois. Application July 16, 1954, Serial No. 443,759. 4 Claims. (Cl. 219—39.)



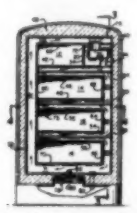
1. In a heat exchanger adapted for vaporizing a volatile refrigerant, a central, generally cylindrical core, a helical vane extending about said core, of a pitch substantially less than the diameter of the helix, a jacket engaging the outer edges of said vane and forming with said vane and core a helical passage extending substantially from end to end of the core, an inlet duct extending to one end of said passage and an outlet duct extending from the opposite end of the passage, a resistance heater in said core extending generally from end to end of the passage, and a heat responsive element conductively connected to said resistance heater and positioned and adapted to make and break an electric circuit for said heater in response to predetermined changes in temperature of fluid flowing through said passage.

Week of Jan. 1

2,775,871. APPARATUS FOR PRECOOLING AND COOLING RAILROAD CARS. William Wood Prince, Chicago, Ill., assignor to Union Stock Yards and Transit Co., Chicago, Ill., a corporation of Illinois. Application April 16, 1953, Serial No. 349,292. 4 Claims. Cl. 62—24.)

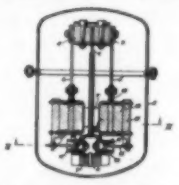
1. In a railroad train, an air cooling car and a plurality of refrigerator cars, at least two parallel ducts extending along said cars, releasable, removable connections between ducts on adjacent cars to define with the ducts, parallel, continuous supply and return passages, extending along the train, means on the air cooling car for cooling air, a discharge connection between the cooling means and the supply passage and a return connection between the return passage and the intake side of the cooling means, each duct on each refrigerator car being ported to permit air flow from the supply to the return duct through the car whereby a closed air circulating system is provided, each refrigerator car being in parallel with the air cooling means, the ports in one duct on each refrigerator car being adjacent opposite ends of the car and the ports on another duct in said car being adjacent the center of the car.

2,775,873. STILL CHILLED REFRIGERATOR. Herbert T. Jones, Harrisburg, Pa. Application Feb. 21, 1956, Serial No. 566,841. 9 Claims. (Cl. 62—102.)



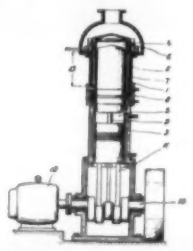
1. A refrigerator comprising an outer shell, a casing spaced within said shell, wall elements defining a plurality of food storage compartments within said casing spaced each from the other vertically, wall means defining in conjunction with said wall element a continuous air flow passage reversely folded between the top and bottom wall elements of adjacent compartments and along at least one side of said compartments but closed therefrom, and refrigeration means in heat exchange relationship with the air in said passage.

2,775,874. METHOD AND DEVICE FOR COOLING COMPRESSOR TYPE REFRIGERATING MACHINES. Gaston Chausson, Asnieres, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, France, a French Company. Application April 13, 1953, Serial No. 348,379. 6 Claims. (Cl. 62—117.8.)



1. A refrigerating unit of the compression type for a refrigerating apparatus, comprising a compressor having two compression cylinders, two cylinder heads and a carrying element for said cylinder heads and cylinders carried by said cylinder heads, said cylinder heads and carrying element providing a common inner chamber to receive gases compressed in said cylinders, and a vertical condenser including a plate, disposed above said compressor, a condenser tube in thermal contact with said plate, said condenser tube constituting successive inclined loops and being connected at its lower portion with the inner chamber of the compressor, and ducts branched at the lower portions of at least some of said successive inclined loops of the concondenser tube and connected to said inner chamber of the compressor, whereby gases exhausted from said inner chamber to said condenser tube are returned to said inner chamber by said ducts primarily in liquid phase where they are vaporized and then exhausted in wet gas phase.

2,775,875. REGENERATOR CONSTRUCTION OF A COLD-GAS REFRIGERATOR. Jacob Willem Laurens Kohler, Leendert de Lange, and Willem Frederik Schalkwijk, Emmasingel, Eindhoven, Netherlands, assignors to Hartford National Bank and Trust Co., Hartford, Conn., as trustee. Application Jan. 6, 1955, Serial No. 480,122. Claims priority, application Netherlands Jan. 19, 1954. 3 Claims. (Cl. 62—136.)



1. A cold-gas refrigerator having a gas invariable chemical composition therein comprising a low-temperature space, a high temperature space, a cooler, a regenator composed of wire material, a freezer having a temperature lower than -40° C., cylinder means, two pistons reciprocating in said cylinder means, said spaces communicating with each other through said cooler, heater and regenerator while said gas performs a closed thermodynamic cycle therein and the volume of said gas being varied in spaces by said reciprocating pistons, the length L of the regenerator being calculated in accordance with the formula

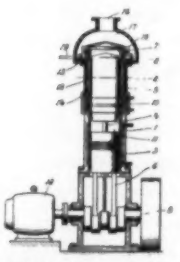
$$\frac{L}{d_h} = C \times P^{0.31} \sqrt{\tau - 1}$$

in which

$$P = \frac{p_{max}}{n.n}$$

and L = the length of the regenerator measured in cms. between the hot and cold terminal surface, d_h = the hydraulic diameter of the wire material of the regenerator in cms., τ = the quotient of the absolute temperatures of the cooler and of the freezer, p_{max} = the maximum pressure in the cycle in dyne/cm.2, n = number of revolutions of the crankshaft of the machine, and n = the dynamic viscosity of the gas at the mean temperature of the regenerator in poise wherein C is equal to at least 3.5.

2,775,876. REGENERATOR CONSTRUCTION OF A COLD-GAS REFRIGERATOR. Willem Frederik Schalkwijk, Leendert de Lange, and Adriaan Koopmans, Emmasingel, Eindhoven, Netherlands, assignors to Hartford National Bank and Trust Co., Hartford, Conn., as trustee. Application Jan. 5, 1955, Serial No. 479,922. Claims priority, application Netherlands Jan. 15, 1954. 3 Claims. (Cl. 62—136.)



1. A refrigerator of the type described provided with a first space having a temperature of lower than -40° C. and a second space having a higher temperature than said first space further comprising a cooler, regenerator of wire material and freezer, said first and second spaces being in open communication with one another through said cooler, regenerator and freezer, cylinder means enclosing said first and second spaces, a gas of invariable chemical composition performing a closed thermodynamic cycle in said refrigerator, two pistons for reciprocation in said cylinder means to thereby vary the volume of said gas in said spaces, the mean speed of the gas in the regenerator being in accordance with the formula

$$n/C_k = C_1 N^{0.41},$$

wherein $N = nd_n/C_k$ and n = the mean speed of the gas in the empty regenerator space in cms. per second, C_k = the sound speed in the gas at the temperature of the space having the higher temperature in cms. per second, n = the number of revolutions of the crankshaft of the refrigerator per second, and d_n = the hydraulic diameter of the wire material of the regenerator in cms. where C_1 is at least 0.5 and at most 1.5.

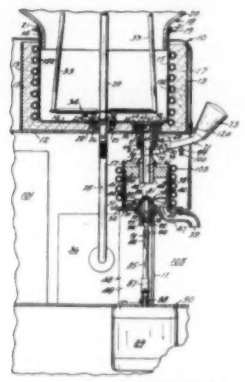
(Continued on next page)

For more information about products advertised on this page use Information Center, page 38.

PATENTS

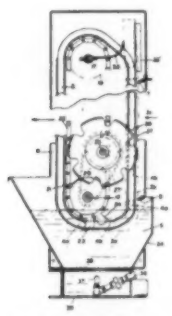
(Continued from preceding page)

2,775,877. BEVERAGE COOLING, DISPENSING AND MIXING MACHINE. Herman A. Bruntjen, Minneapolis, Minn. Application July 23, 1954, Serial No. 445,321. 8 Claims. (Cl. 62—141.)



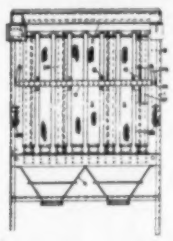
8. In a beverage dispenser, a beverage receptacle, a gravity flow conduit leading generally downwardly from the receptacle and having an open discharge end at a dispensing zone in constant communication with atmosphere, said conduit comprising a diametrically enlarged intermediate portion defining an air chamber having an inlet and an outlet, said outlet being unrestricted and disposed at the bottom of said air chamber, a normally closed control valve associated with said conduit between the receptacle and the air chamber controlling the flow through said conduit and having a control element, and a motor-driven agitator located in said chamber between the inlet and outlet thereof which intercepts the beverage flowing through said chamber and mixes the same with air to a creamy consistency.

2,776,023. AUTOMATIC STACK TYPE FILTER. Deloss H. Robb, Louisville, Ky., assignor to American Air Filter Co., Inc., Louisville, Ky., a corporation of Delaware. Application Jan. 14, 1955, Serial No. 481,943. 7 Claims. (Cl. 183—52.)



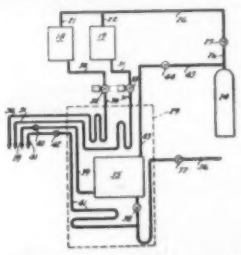
1. In a stack type filter, the combination comprising: a housing providing an air passageway; endless tracks in said housing at the sides of said passageway, said tracks comprising vertical runs joined at the top by curved portions; a plurality of filter members guided by said tracks and forming a vertical stack across said passageway, with the bottom member of said stack resting on a horizontally disposed filter member; means operated periodically for transferring the horizontal member in said tracks to the curved portion of the tracks at the top of said stack; and a rotary arm located adjacent the top of said stack for engaging and biasing said transferred member in the curved portion of the tracks at the top of said stack into vertical alignment with the stack.

2,776,024. SECONDARY AIR SUPPLY MECHANISM FOR FILTERS. Evans E. Fowler, Louisville, Ky., assignor to American Air Filter Co., Inc., Louisville, Ky., a corporation of Delaware. Application April 1, 1955, Serial No. 498,665. 9 Claims. (Cl. 183—61.)



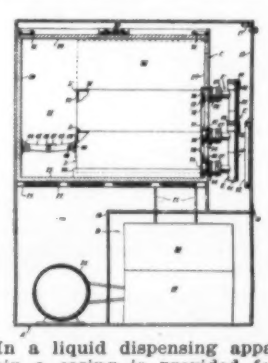
1. In a filter, the combination comprising: at least one vertically arranged pervious filter tube; a blow ring frame carrying a corresponding number of blow nozzle means, one for around each filter tube, said frame being adapted to longitudinally traverse said tube; a generally elliptically shaped hollow inlet nozzle carried by said frame, said hollow inlet nozzle communicating with said blow nozzle means; and an air supply tube having an elongated opening covered by converging flexible flaps receiving said hollow inlet nozzle therebetween, for supplying air through said hollow inlet nozzle to said blow nozzle means.

2,776,074. BEVERAGE VENDING MACHINE. Ernest J. St. Laurence, Minneapolis, Minn., assignor to Practical Products Co., a corporation of Minnesota. Application June 11, 1953, Serial No. 360,885. 5 Claims. (Cl. 222—2.)



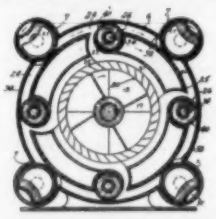
3. In a multiple drink vending machine, a source of plain water, a source of carbonated water, a plurality of containers each for a different flavoring ingredient, conduits leading from the sources of plain water and carbonated water and said containers to a common dispensing zone, means for dispensing measured quantities of said waters and flavoring ingredients, said means comprising a plurality of valves each associated with a different one of said conduits, and selector mechanism controlling said valves to dispense drinks containing a selected one only of said waters and a selected one only of said flavoring ingredients, said selector mechanism including a plurality of actuators one for each type of drink, a plurality of control devices each for a different one of said actuators and each operative responsive to actuation of its respective actuator to open the valve of a single one of said water conduits and a single one of said flavoring ingredient conduits, and coin-operated mechanism for rendering said actuators operative to permit dispensing of a selected drink.

2,776,076. COOLER - DISPENSER WITH REMOVABLE AND REFILLABLE CONTAINER. Leslie R. Nunn, Malibu, Calif. Application Nov. 1, 1955, Serial No. 544,300. 11 Claims. (Cl. 222—83.5.)



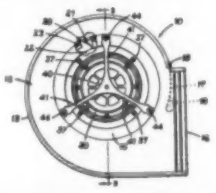
1. In a liquid dispensing apparatus wherein a casing is provided for reception of a liquid container, in combination with said container; a gland on said container adapted to project through an opening in a wall of said casing, said gland having a counterbore defining an annular shoulder at the inner end thereof; a seal unit disposed in said counterbore, said unit including a clip seal of regular polygonal cross section having three equiangular corners and including thin sheet disc seals at respective ends thereof, and means for sealing one of said disc seals to said shoulder; and a spigot unit having an auger of triangular cross section projecting laterally therefrom for insertion through said seal unit, said auger having a piercing point at one of its corners, for piercing said disc seals, and being proportioned so that its respective corners will rest within said equi-angular corners of the clip seal.

2,776,086. FLUID COMPRESSOR OR PUMP. Irving H. Selden, Tacoma, Wash. Application March 18, 1952, Serial No. 277,243. 8 Claims. (Cl. 230—45.)



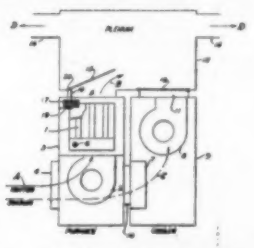
1. In a rotary compressor unit having an enclosing circular frame; a hollow cylindrically shaped rotor mounted concentrically therein to form an annular channel and adapted to travel therein; vanes on the rotor effectively closing said channel; a plurality of rotating abutments mounted in said frame and extending into said annular channel and into engagement with said rotor, dividing said channel into intake and compression chambers, said chambers to be used alternately as intake and compression chambers; slots in said abutments adapted to mesh with each said vane as it passes said abutments; exhaust ports through the enclosing frame from the intake and compression chamber on the compression side of the abutments; an intake passage on one end wall of said frame consisting of an annular opening therethrough concentric with said rotor; intake ports in the adjacent end wall of said rotor, consisting of an annular opening therethrough concentric with said rotor and adapted to admit fresh charges into the interior of said rotor from said intake passage; said intake passage on said end wall of said frame formed by a series of radial louver blades mounted in said end wall, designed and pitched to transmit a minimum of friction to the fluid as it enters said intake passage; radial fan blades mounted in said intake ports in said adjacent end wall of said rotor and having a pitch in the opposite direction to that of the said louver blades in said end wall of said frame and cooperating with said louver blades to draw fresh charges into said rotor and to force them into passages between longitudinal blades within said rotor which assist in further compressing said fluids to force them through openings in the periphery of said rotor adjacent to the vanes on the low pressure side of said vanes into the annular channel where the fluids are further compressed between the vanes and the abutments.

2,776,088. BLOWERS. William H. Wentling, Dayton, Ohio, assignor to The Lau Blower Co., Dayton, Ohio, a corporation of Ohio. Application Feb. 9, 1956, Serial No. 564,465. 6 Claims. (Cl. 230—117.)



1. A centrifugal blower of the character described comprising a housing of generally volute shape including opposed scroll sides, means defining a pair of aligned inlets through said scroll sides to the interior of said housing, a blower wheel within said housing including a cage structure having blower blades therein, means defining an outlet from said housing between the ends of said scroll sides and of greater cross sectional dimensions than said cage, an annular rotor received in and secured to said cage for rotation therewith, a stator received within said rotor in rotatable relation therewith, a shaft extending through and secured to said stator, said shaft being shorter in length than the spacing between said scroll sides to provide for assembly of said shaft with said stator and with said rotor and said cage as a complete subassembly through said outlet into the interior of said housing, and means for mounting said shaft in fixed relation on said housing to hold said stator stationary for rotation of said rotor and cage thereon.

2,776,118. GRAVITY FLOW MEANS FOR SUMMER-WINTER AIR CONDITIONER. Keith T. Davis, Shaker Heights, Ohio, assignor to Carrier Corp., a corporation of Delaware. Application Jan. 29, 1954, Serial No. 407,133. 6 Claims. (Cl. 257—3.)



1. In an air conditioning plant having a plenum enclosure, a furnace unit including a heating element and blower means, a cooler unit including blower means, both said blower means being arranged to provide discharge into said plenum enclosure by way of separate openings, and each of said openings having a check valve associated therewith to automatically permit said discharge and prevent reverse flow; means associated with the check valve of said furnace unit to cause opening thereof automatically upon operation of said heating element without operation of its said blower means.

2,776,121. SECTIONAL COOLING TOWER HAVING INTERMEDIATE WATER REDISTRIBUTION MEANS BETWEEN SECTIONS. Homer E. Fordyce, Gashland, Mo., assignor to The Marley Co., Kansas City, Mo., a corporation of Delaware. Application Feb. 17, 1954, Serial No. 410,814. 3 Claims. (Cl. 261—24.)

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FROM COAST TO COAST
NEWEST KESCO AUTOMATIC
20 FOOT LIFT
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MAKES GRAVITY DRAINS UNNECESSARY
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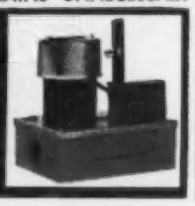
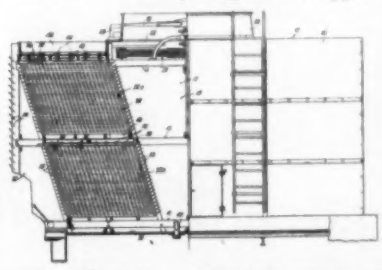


Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office and offer only a brief summary of each invention. Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Copies should be ordered by number and title and a mention of the fact if they are either Designs or Reissues.

Address orders for any of the above to: Commissioner of Patents, Washington 25, D. C.

1. In a cross-flow, water cooling tower, a casing having opposed, vertical side walls, a bottom forming a catch basin, an open end for ingress of cool air throughout the entire area thereof, and an opening in the upper-



most end of the casing for egress of hot air, thereby presenting a chamber between said open end and said opening; a sectional, cross-flow fill assembly spanning the distance between said sides and dividing the chamber into a discharge compartment adjacent the opening and a cooling compartment adjacent the open end, said assembly including a number of superimposed, horizontally offset, vertically inclined sections, each section including a plurality of vertically spaced cooling decks; means for forcing air into the casing from the open end to the cooling compartment, entirely through the fill assembly horizontally and through the discharge chamber, and thence through the opening; an open top, horizontal, primary hot water basin completely overlying the uppermost end of the upper section for discharging hot water onto said upper section for gravitational flow through the fill assembly in perpendicular, intersecting relationship to the flow of air through the fill assembly; and a single, open top, secondary basin between proximal sections having a bottom completely underlying the lowermost end of the fill section thereabove for receiving all the water emanating from the latter, and completely overlying the uppermost end of the adjacent fill section therebelow, said bottom being within a horizontal plane, that portion of said bottom overlying the section therebelow being provided with outlets for transferring all of the water from the section above the secondary basin laterally to the section below the secondary basin, thereby maintaining equal distribution of water throughout the fill assembly.

50 Win Norge Nassau All-Expense Trips

CHICAGO—Forty-four wholesalesmen and six sales managers of Norge distributors each won an all-expense Norge "Viking" vacation for two in Nassau, Bahamas.

W. J. Lancaster Co., San Francisco, with seven wholesalesmen and one sales manager winning vacations, led all distributors in the contest. Reinhard Brothers Co., Minneapolis, finished second with five winners.

Bridgeport Firm Forms

BRIDGEPORT, Conn. — Formation of a new firm, Bridgeport Refrigeration, Inc. at 1788 Stratford Ave., was announced here recently.

Michael Shola, formerly of Bridgeport Refrigeration, Inc., and Robert Wagner of Paramount Refrigeration Co., combined in the new company.

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications $10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

DISTRICT SALES manager commercial refrigeration and air conditioning up to 100 tons. Experienced developing and building dealer organizations, conducting sales training programs, sales promotion, advertising and merchandising programs. Desires connection with responsible company setting-up and serving distributors or dealers preferably New York area. Will relocate for a real opportunity. BOX A5771, Air Conditioning & Refrigeration News.

AIR CONDITIONING sales engineer—8 years' experience (zone sales manager) with manufacturer of residential and small tonnage equipment, selecting and training distributors and dealers. Since 1953, complete charge of dealer operation with highest market saturation in U. S. Limited territory prohibits income desired. Will consider position with manufacturer or Southern dealer. Registered P E (HV & AC). BOX A5772, Air Conditioning & Refrigeration News.

MARYLAND, WASHINGTON, D. C., and Virginia.—Aggressive manufacturer's representative. Engineering background and 10 years of field sales experience now calling on the heating, air conditioning and appliance trade desires to obtain and promote one additional merchandising line. Reply to BOX A5774, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

MANUFACTURER'S REPRESENTATIVE now calling on refrigeration men, to sell complete line of top quality commercial refrigeration for grocery, bakery, restaurant, institutions. Protected territory in Michigan, Indiana, New England. THE C. SCHMIDT COMPANY, 1712 John Street, Cincinnati 14, Ohio.

EQUIPMENT WANTED

SURPLUS AND excess refrigeration equipment: Motors compressors, coils and kindred parts. We will accept condensing units slightly used. Best prices offered. Send particulars, prompt attention given. R & R EQUIPMENT CO., 172 Willis Avenue, Bronx 54, New York.

WANTED: LINES of equipment and supplies in heating, air conditioning, ventilating and refrigeration. New but well qualified agency for state of Georgia and surrounding states. BOX A5775, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

ATTENTION: OWNERS of Baker compressors and condensers. We carry complete stock of repair parts for all Baker ammonia and Freon compressors and condensers. Valves and ice plant equipment. CENTRAL ICE MACHINE COMPANY, 5014 South 24th Street, Omaha, Nebraska.

UNARCO ROYALAIRE self contained units in original crates, water cooled, deep evaporator coil three phase motors. Six three ton and four five ton units priced right for immediate disposal. GILBERT ENGINEERING COMPANY, Box 5503, Dallas, Texas.

NATIONALLY-FAMOUS brand-new condensing units at sensationally low prices. ⅛ h.p. only $34.50. Other sizes up to ¾ h.p. at equally great savings. Also tremendous values in motor compressor domes. ⅛ hp only $31.00 Complete selection of sizes up to 1½ h.p. All units fully guaranteed. Write for complete description and price list. MANN REFRIGERATION SUPPLY CO., 440 Lafayette Street, New York 3, N. Y. GRamercy 3-8000.

USED ROOM air conditioners, hermetically sealed, popular brands, large quantity. WM. A. SCHWARZ & SON, INC., 614 3rd Avenue, New York 16, New York.

MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR, 2833 Lincoln Avenue, Chicago 13, Illinois.

Western Conditioning Show--

(Concluded from Page 1, Col. 4)

American Society of Heating & Air-Conditioning Engineers to be held in the Ambassador hotel here on May 6 and 7.

Tabery said that a series of panel sessions on application of various types of equipment on display will be programmed so as not to interfere with the ASHAE sessions. This will permit engineers to attend both programs, he asserted.

Further details on the conference program are not yet available.

3 Days Exhibits Open to Trade Only

On May 4, 5, and 6, the exhibits will be open to the trade only. This includes buyers and users of air conditioning equipment, as well as those installing it.

On the final two days, the general public will be invited to attend and see the latest developments in air conditioning. Admission is free on all days.

Widely Advertised

Well aware that the future prospects for additional west coast expositions may depend on the success of this show, the exhibit management has been advertising it widely both through the western states and through national publications.

Trade advertising has been directed not only to people in the air conditioning and refrigeration industries, but also to hotel and motel operators, restaurant owners, building contractors, engineers, architects, purchasing and engineering personnel for large office and apartment buildings, retail establishments, and industrial plants, and government officials.

The current list of exhibitors follows:

List of Exhibitors

Aeroquip Corp.
Air Distribution Products
Air Equipment Sales
Air Factors, Inc.
Air-Maze Corp.
Air & Refrigeration Corp.
Airfan Engineering Co.
Alco Valve Co.
Allen Roof Exhausters
Allied Industries
American Air Filter Co., Inc.
Anemostat Corp. of America
Automatic Devices Co., Inc.
Bahnson Co.
Barnebey-Cheney Co.
Bishop & Babcock Mfg. Co.
Brunner Mfg. Co.
Bryan Steam Corp.
Buensod-Stacey, Inc.
C & S Equipment Co.
California Polytechnic College
Carnes Corp.
Cleaver-Brooks Co.
Coast Insulation
Comfort Air Sales
Continental Air Filters, Inc.
Cooling & Heating Engineers
Copeland Refrigeration Corp.
Crane Co.
Custom-Air Furnaces
De Bothezat Fans Div., American Machine & Metals, Inc.
Donaldson Power Ventilator Co.
Dunham-Bush, Inc.
Dust Control, Inc.
Dwyer Mfg. Co., F. W.
Edgewood Mfg.
Electro-Air Cleaner Co.
Elliott Engineering
Fabling Industrial Supply
Farr Co.
Fedders-Quigan Corp.
Fenwal, Inc.
Fraser & Johnson
Friez Instrument Div. Bendix Aviation Corp.
General Air Conditioning Corp.
General Blower Co.
General Chemical Div., Allied Chemical & Dye Corp.
Green Fuel Economizer Co., Inc.
Heating Equipment Mfg. Co.
Heat & Power Equipment Co.
Heat-X, Inc.
Hess, Greiner & Polland
Industrial Acoustics Co., Inc.
Industrial News.
Jackes-Evans Mfg. Co.
Jacuzzi Brothers, Inc.
Jenn-Air Products Co., Inc.
Johnson Service Co.
Jules Gratiot Co.
Kilburn Mfg. Co.
Koppers Co.
Laars Engineers
Lennox Industries, Inc.
Littrell Hardware Lines
L-O-F Glass Fibers Co.
John W. Lytle Corp.
Marley Co., The
Marshall Instruments, Inc.
Master Fan Corp.
McQuay, Inc.
Mideo Registers & Grills
MMM, Inc.
Montgomery Bros.
National Heater Co., Inc.
Natural Gas Equipment Co.
Pacific Scientific Co.
Partlow Corp.
Peerless Electric Co.
Price & Rutzebeck
Prox Co., Inc.
Pyramid Instrument Corp.
Ramset Fastening System, Olin Mathieson Chemical Corp.
Raypak Boiler Co.
Recold Corp.
Refrigerating Specialties Co.
Rite Engineering & Mfg. Corp.
Russell Sales Co.
San Gabriel Boiler
Sausse & Co., M. S.
Shaw-Perkins Mfg. Co.
Smallcomb Electric
Smith Corp., A. O.
Southern Counties Gas Co.
Stewart Mfg. Co., Inc.
Tecumseh Products Co.
Tennity & Co.
Thermal Products, Inc.
Thieme Construction Co.
Thrush & Co., H. A.
Titus Mfg. Co.
Tork Time Controls, Inc.
Typhoon Air Conditioning Co.
Utility Fan Corp., Div. of Utility Appliance Corp.
Valley Home Insulation
Vulcan Electric Co.
Warburg Co., Ed
Ward Refrigeration
Water Chemists, Inc.
Western Asbestos Co.
Western Tool
White-Rodgers Electric Co.
Wiegand Co., Edwin L.
Wiremold Co.
Yancy Co.
Ziegler

Carrier Merger--

(Concluded from Page 1, Col. 5)

both firms at special meetings to be announced later.

Under the agreement, Carrier will give .65 shares of Carrier common for each share of Elliott common. It will give 1.2 shares of Carrier 4½% preferred for each share of Elliott 5% cumulative preferred stock.

It is expected, according to the announcement from both companies, that Elliott's 5% second convertible preferred stock will be converted into Elliott common and then exchanged for Carrier common.

Carrier reportedly already holds 21% of Elliott common and 6,000 shares of Elliott convertible preferred.

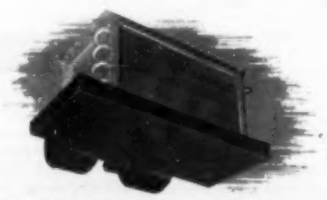
William A. Elliott, president of Elliott, told stockholders at their annual meeting recently that "a mutuality of interest" made the merger a sound move. He predicted both companies will be stronger as a result of the consolidation.

Elliott had annual sales last year of more than $45 million, and earned $1,716,000 on them. First-quarter earnings this year were $519,593, up from $490,944 in the same period last year.

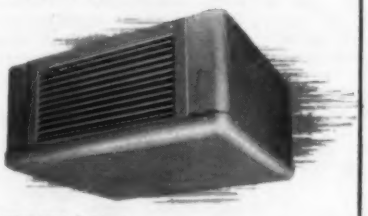
Here's Why

Dunham-Bush 'CR' Year 'Round Room Air Conditioners provide MAXIMUM FLEXIBILITY

'CRV' Console Unit



'CRH' Basic Unit



'CRH' With Cabinet

'CRV' Basic Unit

FLEXIBILITY... in choice of Construction

That's the keynote of the Dunham-Bush line of 'CR' year 'round room air conditioners. Typical of the variations available: cabinet or recessed models; vertical or horizontal models; combination water cooling and heating coils; combination direct expansion and steam coils; three control kits.

FLEXIBILITY... in Selection

Model	CFM Normal Speed	Water Coil Capacities		Inner-Fin Direct Expansion Combination Steam Coil	
		Cooling BTU/hr	Heating BTU/hr	Cooling BTU/hr	Heating BTU/hr
CRV-220 & CRH-220	220	5,600	18,300	6,400	15,300
CRV-330 & CRH-330	330	8,400	25,400	9,800	21,500
CRV-450 & CRH-450	450	13,200	35,300	14,900	28,000
CRV-600 & CRH-600	600	21,000	55,000	23,200	45,300

Cooling capacities (total heat) based on entering air 80° DB, 67° WB, 45° water (or 40° suction).

Heating capacities based on entering air 60°, 2 psig steam.

FLEXIBILITY... in Installation

Vertical models with cabinet can be exposed or semi-recessed, basic units completely recessed. Horizontal units with cabinet can be ceiling suspended in conditioned space; basic units can be utilized for unexposed installation.

Contact your nearest DUNHAM-BUSH Sales Engineer for complete specifications or write for 'CR' catalog.

Dunham-Bush, Inc.

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